

Goalie coach course for the IIHF

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<p>The purpose of making a goalie coach course-manual for the International Ice Hockey Federation was to provide them some written material to pass on to their national associations that they could use for educational purpose. The main idea in the manual was to provide basics of the goalkeeper's game and everyday work for beginning goalie coaches.</p> <p>The starting point was to stress out the major questions that are concerning goalie coaching. One key factor was also to show the differences in development between different age groups.</p> <p>The manual gives advice and guidelines for everyday work with goalies from different age groups. It also points out the most crucial factors according technical, tactical, mental and physical development of an ice hockey goalie.</p> <p>The manual consists of 5 chapters. These include the teaching process of learning new skills, mental coaching of an athlete, sport specific skills of an ice hockey goalie, the demands of game situations for an ice hockey goalie and the everyday actions with a goalie in the team environment. Every chapter is divided into subcategories.</p> <p>The project started in April 2010 and was finished in February 2011.</p> <p>The manual is an effective tool in the future for the International Ice Hockey Federation and their National Associations to educate goalie coaches.</p>	
Key words Goalie coaching, goalie development, ice hockey	

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1 Introduction

1.1 Why I chose this project

In today's hockey the goalies affect to the end result of a hockey game is indisputable. In order to develop good goalies there has to be a goalie coach available for these individuals in a team sport.

I had the chance to live through a career as a goalie, and had the luck to be able to work with really good goalie coaches from junior ages on. The possibility to use your own knowledge and expertise is of course the optimal situation when starting your thesis.

All major ice hockey federations have their own goalie coach educational programs that develop their goalie coaches' knowledge and abilities. Smaller ice hockey nations haven't had the resources for this, but the International Ice Hockey Federation has tried to spread the knowledge around ice hockey also to these smaller countries. Until now the IIHF didn't have a separate goalie coach educational program.

The possibility to establish something really useful in the hockey world was a great motivation to start working on the content of a new goalie coach course for the IIHF.

1.2 The benefit for the IIHF

The IIHF provides education and help for all its member nations as much as their resources allow them. Coaching courses, team manager courses, equipment manager courses, workforce with knowledge of the game, experts and administration help are all really important resources for national federations of smaller hockey countries.

In the last few decades the understanding for the need of individual goalie coaching has increased significantly in the world, where Finland has been showing a good example in this. World class goalies have come from Finland in the last ten years, and the

reason has been a strong believes into individual goalie coaching. Now also the IIHF has taken it as a mission, to establish their own education program for goalie coaches in also smaller hockey nations.

This project gives for the IIHF one more big aspect in addition for their tools in their mission to spread the knowledge and the message of ice hockey to the whole world.

2 Ice hockey as a game

The rules are the factor that makes ice hockey into a game. They are the ones that make boundaries to the actions of the players and define sanctions for players who break the rules. It is the rink with the goals and lines and the two teams with their equipment that make ice hockey into a game. The rules define that the purpose of the game is to score goals and to prevent the opponent from scoring. The team that scores more goals than the other wins the game. (Westerlund 1992.)

Ice hockey is a game which includes an unlimited amount of changing game situations. The factors that change each situation are the amount of your own and the opponent's players on the ice, the place of the puck and the place where all players are positioned in each situation. Other changing factors are the movement directions of the players and the puck in relation to the rink and their movement velocity. The total amount of game situations in relation to the time is constant, but the amount of game situations divides differently for the two teams in relation to the skill levels of individual players. (Westerlund 1992.) Figure 1 shows the amount of game situations that happen in one game according to the constant sum theory. (Thusberg & Mikkola 1985, 4).

Table 1. Constant sum theory (Thusberg & Mikkola 1985, 4)

	Constant sum	Equal teams	A level difference in the teams (example)
Effective playing time (min)	60		
Score	2	1 – 1	2 – 0
Puck possession time (min, the time includes all loose pucks)	60	30 – 30	40 – 20
Total amount of puck possessions (individual)	1200	600 – 600	700 – 500
Total amount of successful passes	800	400 – 400	500 – 300
Total amount of take-overs	400	200 – 200	200 – 200
Total amount of attacks	140	70 – 70	80 – 60
Total amount of shots (shots wide included)	110	55 – 55	65 – 45
Total amount of shots on the net	68	34 – 34	40 – 28

3 The goalies game

Ice hockey is a team sport, where the objective of the players on ice is to either score a goal or to prevent the opponent from scoring a goal. The team that has scored more goals than the opponent at the end of a regular game is the winner of the game. (International Ice Hockey Federation Rulebook 2010, 41.)

Most knowledgeable hockey people place the goaltender's value at 60% or more to a team's success. Yet until the goaltender starts scoring he can't win you a hockey game. (Mind In The Net Goaltending 2010.)

The goalie makes often the difference between winning and losing a single game. The goalie participates to the offensive and defensive plays of the team. The biggest responsibilities are though preventing the opponent from scoring goals. (Finnish Ice Hockey Association 1998.)

The goalie needs both technical and tactical abilities in a game situation. He has to understand all the objectives of different game situations, and he has to be able to make decisions according to these. In able to perform all the acquired skills a goalie has to be in good physical condition. In addition to these he has to have strong mental abilities to perform under highly stressful conditions. (Westerlund 1997, 535-543.) A successful play of the goalie consists of various changing factors (Sinclair & Moyls 1979, 60).

During one game the goalie will face an average of 24 shots per game. 67 % of these shots are from the perimeter and are considered easy-to-medium difficulty. Only 15 % of shots are considered to be of the difficult calibre. (Hockey Canada Goaltender manual 2004.)

3.1 The objectives of the goalies game

The biggest objective of the goalies game is to prevent the puck from entering the goal he is protecting. According to Nykvist & Ekholm (1996, 9) the primary objective of the goalie is to position himself at the time the shot starts between the centre line of

the goal and the puck. Through this the goalie has the chance to save the puck through a basic save.

The goalie has to be able to make the first save while making sure to put rebounds in safe places to avoid second-shot opportunities. Goalies must be able to read plays and anticipate what the opponent may do. In addition, they must be able to communicate verbally with teammates, assisting them when they are under pressure. Finally, goaltenders must be able to set up the puck cleanly for the defensemen, pass it quickly with velocity, and move it out of the zone when the situation dictates. (Gendron 2003, 44.) If needed he has to be able to help his team in both offensive and defensive plays through interceptions, passes and saves (Finnish Ice Hockey Association 2009).

3.2 The game skills of the goalie

The game skills of the goalie can be defined into two different sections. The IIHF (International Ice Hockey Federation) Level III training module for goalkeepers (2007) separates them into technical skills and game sense and tactical skills.

Technical skills are defined as the basic stance in which the goalie makes all his saves, movement and positioning, basic saving techniques and basic stick handling techniques (International Ice Hockey Federation 2008).

The game, especially at the higher levels, is not just a test of physical and technical strength, because the goalie cannot solely rely on these skills. The game imposes also mental demands on the goalkeeper. Moreover, the goalkeeper should have the ability to read the game and situations even before it has happened. Tactical goalkeeping has in it tactical, physical and mental components. (International Ice Hockey Federation 2007.)

3.2.1 Technical skills

The sport specific skill of the goalie is the usage of the technical skills in a best possible manner according to the situation present. The correction of technical mistakes and

learning of new styles is a part of this. Style is a personal way of performing a technique. (Mero 1997, 141.)

Technical skills are the basic stance, movement, positioning, basic saving techniques, basic game situation saving techniques and stick handling techniques.

3.2.1.1 Basic stance

The basic stance is a stand-by position, where the goalkeeper can remain for longer periods of time. Quick movement is possible in this position, and saving conditions are not being compromised. (Nykqvist & Ekholm 1996, 1.)

There are two different basic stances in today's ice hockey. The stand-up and the butterfly basic stance. The basic stance of the goalkeeper has to allow optimal balance, mobility, comfort and speed of movement. (International Ice Hockey Federation 2008.) The basic stance is one of the most important technical skills because out of this all other saves start.

In the stand-up basic stance the goalie stands with his feet approximately shoulder width apart. His knees and trunk are flexed slightly forward. The weight of the body is on the middle of his skates. The shoulders, knees and the front of his feet should be joined in an imaginary vertical line. The back needs to be straight to keep up the balance of the upper body. The catcher glove and blocker are slightly in front of the body and on the side of the knees. The goalie has to be able to move the hands freely in front of his body. The stick is being held with one hand firmly and the blade of the stick is approximately 25-30 cm in front of the skates. (International Ice Hockey Federation 2008.)



Figure 1. The basic stance

The butterfly basic stance is used to cover both low corners at the same time. It is nowadays the most modern and effective style against low shots, possible deflections and dekes. However this style is very hard to perform physically. Muscle strength and good flexibility is needed to perform this technique correctly. (International Ice Hockey Federation 2008.)

In the butterfly basic stance the feet are widely spread to the sides, the knees are on the ice behind the stick and the ankles are flat to the ice with toes extended out toward the sideboards. The stick is approximately 25-30 cm in front of the pads. The gloves are at the waist height over the extended pads. They have to be slightly in front of the body so the goalkeeper can move his hands freely. Elbows should be close to the trunk in order to reduce open spaces between the hands and trunk. The back should be as straight as possible and the hip extended so that there is not much space in the upper corners of the goal. (International Ice Hockey Federation 2008.)



Figure 2. The butterfly basic stance

3.2.1.2 Movement

Goalkeeping is being at the right spot at the right time. In order to get there the goalie has to move. (Finnish Ice Hockey Association 1998.) Movement in front of the net is essential for effective goalkeeping.

There are several different ways of moving for the goalie. Skating skills is the most important one of these. The importance of skating skills cannot be stressed enough. By mastering the necessary skating skills the goalie can execute movements with speed and precision. The skating skills for goalies are very specific and unique in nature due to the position played and equipment that is worn. (International Ice Hockey Federation 2008.)

Lateral movement in front of the net is done through two different movement techniques, the shuffle and the T-push.

The shuffle is a technique where the goalie is able to maintain the basic stance, be square and on the centre line of the puck. The technique is used to follow the play laterally across the ice surface. (International Ice Hockey Federation 2008.)

In the shuffle the skate in which direction the goalkeeper is moving is slightly off-weight. The toes of both legs are facing the puck during the movement. In situations

that acquire minor movement each lateral shuffle should be in length of approximately 25-30 cm. In some situations where the puck goes quickly from side to side behind the net the goalie has to make longer shuffles which acquire more power. (International Ice Hockey Federation 2008.)



Figure 3. The shuffle going to the right

The T-push is a longer and faster technique for lateral movement. It is used when speed is the main priority or when there is no imminent threat of an oncoming shot. The disadvantages of this technique are that the goalie is in an unbalanced position, and making quick turns from this is hard. Young goalkeepers use this technique more often because it is a relatively easy method to move laterally (International Ice Hockey Federation 2008). During the T-push the leg in which direction the movement is going has to be rotated outwards. The pushing leg has to extend. In order to stop the movement the rotated leg has to be rotated back inward. (International Ice Hockey Federation 2008.)



Figure 4. The T-push

A goalkeeper has to be able to move in front of the net quickly forward and backward. For this movement the best technique is sculling. When the goalie sculls, one leg pushes and the other one glides. Through this the goalie is able to maintain the basic stance the whole time. The goalkeeper has to learn to scull with both legs, so that he is able to use them in specific game situations. As an example, when the puck carrier is approaching from an angle, the goalkeeper should push with the skate furthest from the puck and glide on the short side skate. This technique ensures the goalkeeper continues to protect the short side. (International Ice Hockey Federation 1998.)



Figure 5. Backward sculling

3.2.1.3 Positioning

In able to play the game efficiently has the goalkeeper master the skill of positioning. The basis of positional play is to take away as much of the net as possible in relation to the puck (International Ice Hockey Federation 1998). The goaltender has to position himself always in relation to the puck, the puck carrier and the net.

There are few requirements for efficient positioning.

1. A good ability to read the game and understand the game.
2. Good movement skills up and down on the ice.
3. Good physical abilities for explosive and agile movements on the ice.

(Finnish Ice Hockey Association 2009.)

Positioning includes four different theories that determine how the goalkeeper should position himself. These theories are the Centre line theory, the Horizontal line theory, the Vertical line theory and the Short side theory. (International Ice Hockey Federation 1998.)

The Centre line theory states that the goalie should be always positioned on an imaginary line, which could be drawn from the starting point of the puck to the middle

point of the net. This theory can be used always in all situations. (Finnish Ice Hockey Association 2009.)

The Horizontal angle theory states that the empty areas in the net become smaller the more the goalie comes out of the net towards the puck. The farther out of the net the goalkeeper comes; the better is their position. The goalkeeper must remember that they should not come out so far that a quick return to the net cannot be performed should the game situation change.

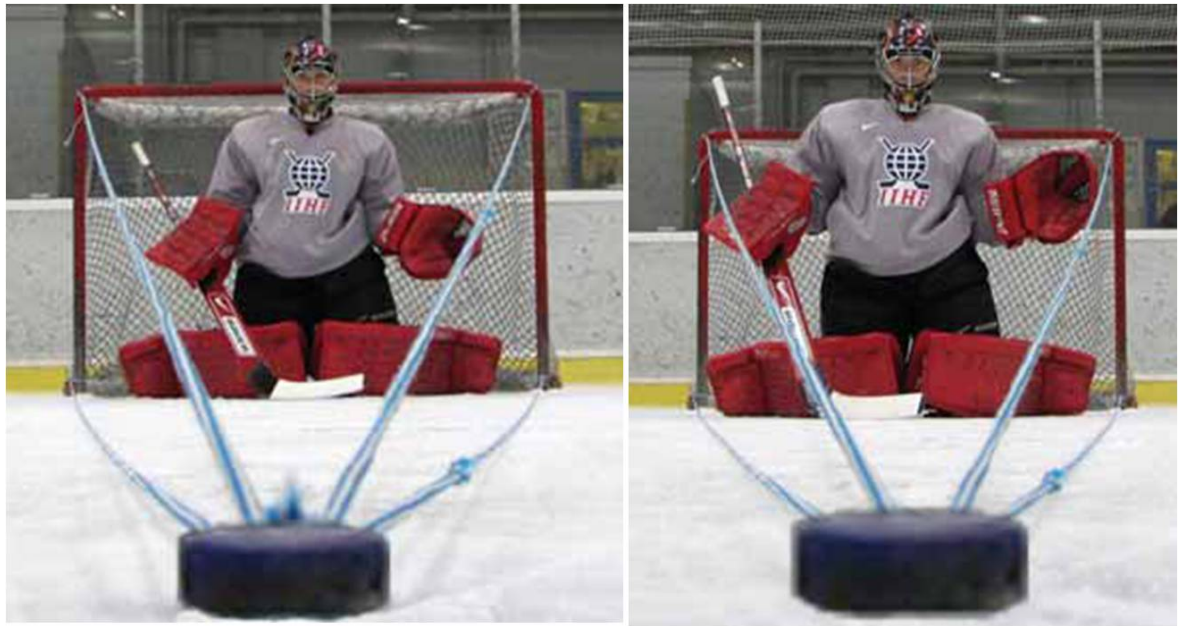


Figure 6. Horizontal angle theory – the goalie inside the goal and outside on the crease

The Vertical angle theory states the same fact as the Horizontal angle theory. The closer to the puck the goalkeeper gets, the smaller is the free area in the net. This theory becomes a significant factor as the puck moves closer to the net.



Figure 7. Vertical angle theory

The Short side theory is slightly different from all three other theories and is developed to make the decision making process of the goalkeeper more easy. This theory is used only in shots coming from a sharp angle close to the goal line. The goalkeeper covers the short side (the side closest to the puck carrier). This forces the puck carrier to shoot across the goalkeeper's body to the far side of the net. By cutting off the short side, all indecision is removed. The shot or deke must go to one side, therefore, the goalkeeper is required to move in only one direction.



Figure 8. Short side theory

3.2.1.4 Basic saving techniques

If a goalkeeper is able to maintain a proper basic stance in the correct position, they will be in position to block most shots taken at the net. However, because of the speed at which the game is played, this ideal situation does not always occur. (International Ice Hockey Federation 1998.)

Basic saves give a model for stopping the puck that is directed into different directions. Low and high shots demand a different saving model, so that stopping the puck would be as efficient as possible. A save that is performed technically correctly is efficient and physically not stressful. (Kannas 1985, 4.)

The goal can be divided into six different saving areas. From these areas the puck can be stopped either with stand-up techniques or with one knee (Half-butterfly) or both knees (Butterfly) on the ice.

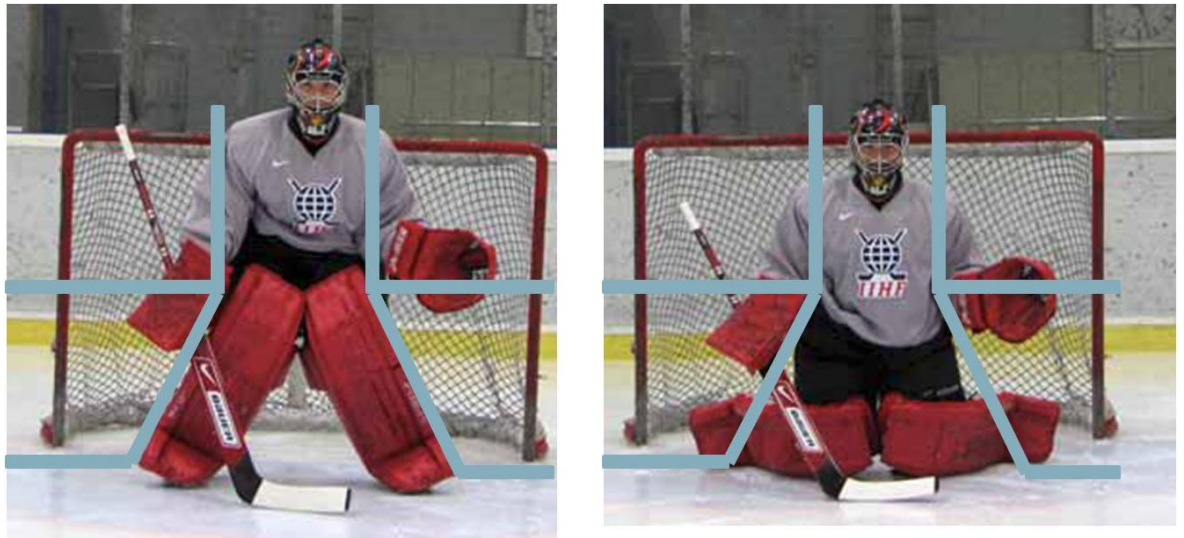


Figure 9. Basic puck saving areas

Shots into all three heights, low, middle-height and high, can be all saved through three basic saving models. These are the stand-up, half-butterfly and the butterfly.

In low shots the goalkeeper saves the puck always with the stick. The stick is approximately 25-30 cm in front of the skates. When the shot comes slightly to the side of the goalkeeper he has to turn the blade of his stick slightly into the direction he wants to direct the puck. The movement of the shoulder is the one that initiates the turning of the blade. The basic stance is modified very little during a stick save. (International Ice Hockey Federation 2008.) During the save the eyes are focused on the puck. The difference between these three saving techniques is that from the stand-up save continuing the game is easier than from the saves made on the ice. The advantage of the half-butterfly and the butterfly is that the ice-surface is secured. The half-butterfly style helps the goalie to reach longer to the side.



Figure 10. Basic puck stopping techniques – low shots

The mid height area of the net is one of the most difficult areas to defend as it requires a combination of saves from all three areas of the net (International Ice Hockey Federation 2008). The choice of saving technique is made by the goalkeeper according to the tactical situation of the game and his own style of play. The stand-up style is used for shots that originate from a long distance and there is now fear of deflections of any kind. During the saving motion the hands are the ones that make the save. The half-butterfly technique was used mainly by the goalkeepers from the 1990s, but it is still widely used and is a useful skill to master for all goalies. It demands good balance and good body control to maintain the right position during the save. The difference to the butterfly is here that the leg on which side the save is made is not covering the ice. The save is made through the hands in front of the pads. The butterfly technique is used mostly by modern goalies and it is the most used technique these days. It covers the ice surface in case of deflections and gives a good balance because both legs are flat on the ice. This technique demands good flexibility though. The save is made also through the hands in front of the trunk.



Figure 11. Basic puck stopping techniques – mid height shots

High shots are the most efficient ones in today's hockey. Coaches' guidelines and teaching material about scoring emphasizes that shots should be taken high into the net. (Gendron 2003, 130.) This gives special challenge for goalkeepers to face the on-coming threat of high shots. The techniques used for high shots don't differ much the techniques used for mid height shots. The biggest difference is that the hands have to be brought more in front of the body. Especially in shots that originate close from the net it is crucial to get the gloves as close as possible to the puck. In shots from a longer range the choosing of the saving technique used by the goalie depends a lot of his personal style.



Figure 14. Basic puck stopping techniques – high shots

3.2.1.5 Basic stickhandling techniques

The demand set by the faster pace of the game that is played nowadays has increased also the participation of the goalkeeper to both offensive and defensive play through his stickhandling abilities (Nevalainen 2001, 21). The goalkeeper has to be able to pass the puck, intercept passes and play away rebounds with his stick and to shoot the puck out of the defensive zone (Daccord 1998, 156). The stickhandling techniques can be divided into poke checks, passes, interception of passes and stopping the puck.

The poke check can be used in various situations and is a very helpful tool for the goalie to prevent a scoring situation. The most common ones are strives to the net from the post, playing away rebounds and in breakaways. The poke check is done by hitting the puck away from the blade of the puck carrier when he lowers his view down to the puck. The poke check can be done either with a long stick or a short stick (Daccord 1998, 103-107). When the poke check is done with a short stick the motion is faster and the goalkeeper is faster ready to continue the game again.

The goalkeeper can pass the puck to his teammates in various situations of the game. Depending from the tactical situation of the game the pass can be short or long, hard or soft. The goalie can lift the puck off the ice or he can pass the puck along the ice (Nykqvist & Ekholm 1996, 25). The puck is easier to lift up if the supporting leg is the one of the catcher but more power to the pass the goalkeeper gets if the supporting leg is the one on the side of the blocker (Daccord 1998, 166). The goalkeeper can use either strong side passes or backhand passes (Nevalainen 2001, 22).

The goalkeeper can intercept passes with a similar technique like in the poke check. The goalkeeper has to identify the game situation and decide when an interception is needed. Situations in which interceptions are needed are passes from behind the net, passes across the goalie crease, to pucks that bounce to the net from the end boards and to passes that are rimmed into the boards (Nykqvist & Ekholm 1996, 25).

3.2.1.6 Playing in different scoring situations

The goalie has to be able to use his basic puck stopping skills in different scoring situations. The selection of the saving technique used in each situation comes from how well the goalie masters different styles, how well he reads the game and how well he is able to move in front of the net.

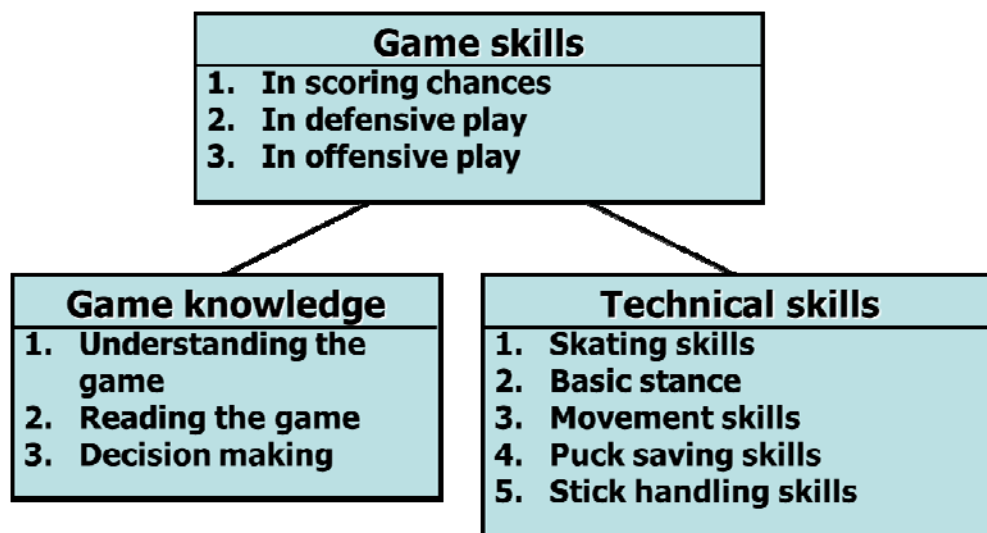


Figure 13. Game skills of the goalkeeper (Finnish Ice Hockey Association 2009).

There are 10 different basic scoring chances that can happen during a normal ice hockey game. A basic shot, a shot from a vertical pass, a shot from a lateral movement, a shot from a lateral pass, the puck carrier striving to the net from the post, the puck carrier crossing to the net from the high slot, a shot with screening in front of the net, deflections, rebounds and breakaways. (Finnish Ice Hockey Association 2009.) The goalkeeper has to be able to choose always the correct basic saving technique for each situation according his technical and tactical view of the game.

3.2.2 Game sense and tactical skills

The tactical thinking of goalkeeping keeps in itself playing the game in continuously changing contradictory situations. The goal of the tactical actions during the game is to achieve optimal success. Tactical actions are:

- analyzing the game through taking in consideration all inner and outer factors
- to perceive optimal solutions in taking consideration own abilities and the abilities of the opponent
- motoric implementation of the tactical situation by using optimally the technical capacity and physical abilities. (Nevalainen 2001, 23.)

The implementation of tactics is based on the ability to make decisions of an individual goalkeeper. Goalkeeping is continuous perceiving the surrounding (reading the game), thinking and making decisions according the things mentioned before (reacting).

(Nevalainen 2001, 23.)

Game sense can be divided into understanding the game, reading the game and in making decisions (Westerlund 1997, 534).

3.2.2.1 Understanding the game

Good team play bases on a congruent understanding of game situations and co-operation of players. When the goalkeeper understands well the game, he can separate the essential things out of it. (Westerlund 1997, 534.)

The goalkeeper has to understand the objectives of co-operation in defensive plays. He understands the meaning of correct positioning and movement in changing game situations. The goalkeeper understands the meaning of perceiving the pace, direction and movement of the puck and the players. One big factor is also the uniform understanding of the goalie coach, head coach and the goalkeeper of the objectives of goalkeeping. (Finnish Ice Hockey Association 2009.)

3.2.2.2 Reading the game

Reading the game means the perceiving of the pace and movement direction of players and the puck in accordance to the ice surface (Westerlund 1997, 535 & Finnish Ice Hockey Association 2009). The goalkeeper is able to interpret the goal scoring game and is able to anticipate future actions of opponent players. Through this the goalkeeper can react correctly to the oncoming situation and choose the right saving model according his personal style and attributes. The goalkeeper has to be able to perceive always the puck carrier and the non-puck carriers of the opponent who could be possibly dangerous. (Finnish Ice Hockey Association 2009.)

The quality of reading the game depends on the extent of the gaze, field of vision, the developmental stage of technical and tactical abilities, knowledge and experience, concentration and the attitude of the athlete (Harre 1975, 184). Experienced goalkeepers usually exhibit a better skill of reading the game (Koivisto & Piesanen 1989, 96).

3.2.2.3 Making decisions

Making decisions is based on the choice an individual player makes in a game situation. In a similar situation different players make different decisions. (Westerlund 1997, 535.) Goalkeepers have to choose the right game skills for specific game situations. As an example the goalkeeper saves a mid height shot from a far distance without traffic in front of the net with a stand-up save according his unique playing style (International Ice Hockey Federation 2008). The saving motion is always made into direction in which the puck goes. Timing and positioning have happen according the game situation present. (Finnish Ice Hockey Association 2009.)

4 Coaching a goalie

In ice hockey the head coach has a large amount of individuals to concentrate on in his players. When coaching in team sports or just a large group it is important to take in consideration the athletes as individuals. (Heino 2000, 165-167.) In ice hockey it is still relatively common that the goalkeeper gets very little or no technical instruction and personal attention from the head coach. It is difficult for the coach to concentrate on one or two goalkeepers while having a responsibility for 20 or more other players. (International Ice Hockey Federation 2007.) That also the individual development of goalkeepers would be possible needs a team also a goalie coach (Heino 2000, 167). The goalie coach should always work progressively with the goalie in all aspects of the game (Hockey Canada 2004, 7).

4.1 The basis of goalie coaching

Today's coaching should be seen through a holistic approach. The objective of coaching the goalie should be a holistic guidance in growth and development. This means taking in consideration the physical, mental and life situations entirety. The mission of the goalie coach is to make the goalkeeper to understand ice hockey as a part of the entirety of his life, to make him to knowledge his own strengths and help him to achieve his own personal goals. The coaching should base on a confidential interaction between the goalie and his coach. Interaction skills of the goalie coach are crucial for this purpose. (Lamminaho & Westerlund 2010.)

4.2 Emphasized training areas in different age categories

The goalies can be divided into five different age categories. Every age category has got its own emphasized training areas. These categories are:

Category 1: Up to 12 years

Category 2: 12-14 years

Category 3: 14-16 years

Category 4: 16-18 years

Category 5: 18 and older

(International Ice Hockey Federation 2008.)

Goalie coaching focuses on four different categories which are technical, tactical, physical and mental skills.

4.2.1 Motoric development

Motoric development of children is the development of different parts and regulation of their movements of the body (Schmidt 1991, 15-44). The motoric development continues through the whole life as progressive changes in the motoric functions, which can be seen as a result of the interaction between the child and his environment (Numminen 1996, 11). The body receives information from inside and outside of the body, which makes possible the motoric development through the development of the nervous system, bones and the muscular system (Schmidt 1991, 15-44).

Motoric development can be either a process or the result of a process. When motoric development is examined as a process, then it means the effects of inheritance, environment and skills to the execution of movements and control of movements in different stages of life. As a result of a process motoric development is examined through the point of view of different age categories like infants, children, adolescence and adults. (Gallahue & Ozmun 1997, 17-18.)

Motoric development can be divided into four different main stages, which all have own sub-categories (Gallahue & Donnelly 2003, 62). The process of development proceeds from the learning of reflex movements through elementary movement skills to basic sport skills and finally to the phase of learning sport specific skills (Gallahue & Donnelly 2003, 64).

Motoric development follows a certain order, for which the base are involuntary reflex movements e.g. the balance reflex. This phase lasts usually from birth to the end of the first year of life. (Gallahue & Donnelly 2003, 64.) Elementary movement skills are the first voluntary movements of a child and they can be seen already right after birth. These movements are e.g. grabbing, crawling and reaching at objects. This phase takes

place between the ages one to two. (Gallahue & Donnelly 2003, 64.) At the phase of basic sport skills the child tries out his possibilities to move his body in accordance to his surroundings. Motoric basic sport skills are balance skills, movement skills and handling skills. This phase takes place between the ages of 2 and 7. (Gallahue & Ozmun 1997, 77-95.) At the phase of sport specific skills the child gets interested in sports in generally and of different sports specific skills. The developmental phase of sport specific skills starts around the age of 7 and goes on until adulthood. (Gallahue & Donnelly 2003, 64.)

The sensitive period of motoric development as a closed concept means the critical period of time when a certain learning process can only happen. A sensitive period can also mean an age category where practicing leads to fast development. It has been observed that development of senses and the nervous system happen in specific optimal periods and in real sensitive periods. All motoric features don't have a common sensitive period, but each feature has its own sensitive period. (Holopainen 1991, 27-28.)

The sensitive periods of children don't follow the calendar age and because of this this has to be taken in consideration when practicing with them (Autio, Nenonen & Louhiala 1995, 82).

The sensitive period for skills is in the childhood and because of this versatile physical activity is a starting point for e.g. sports (Mero 1997, 143). The first sensitive period is from age 0 to 8. This period can be used well for developing basic movement skills. During this period the central nervous system is still plastic, which means resilient and it can develop fast with systematic motoric training. The central nervous system develops until the age between 6-7 and it is important that children get a lot of sensorimotoric stimulus from their body and from the world surrounding them through their senses. (Kemppinen & Sunila 2005, 40; Välimäki & Helin 1988, 376-377.) The second sensitive period of skills is between the ages 9 to 12. At this phase children learn faster than in any other phase of their life (Välimäki & Helin 1988, 376-377). The broader the base of different movement skills is the easier it is for a child to specialize later in life into a specific sport. This is why it would be important to play as many sports as possible in this phase.

Speed is an ability that starts to develop already after the age of 4, and the developmental phase continues until the age of 13. The fastest development phase is between the ages of 7 and 10 (Autio, Nenonen & Louhiala 1995, 44). Between the ages 7 and 12 the development of the operating frequency is very fast due the development of the nervous system. This is why this phase can be called the sensitive period of the operating frequency. Because of this this is also the ability which should be emphasized in this phase in accordance to speed and endurance. (Mero & Pullinen 1990, 130.)

Strength-training cannot be started fully before the age of 13 for boys and for girls before the age of 12. The hormonal maturation starts approximately at these ages. Before these ages strength-training should be lighter but still systematic. (Mero 1990, 108.)

The development of endurance during the childhood is very important because endurance has a straight impact to other physical abilities. In addition to this endurance training during childhood creates a good basic endurance and enhances aerobic capacity. However, in endurance training of children there has to be remembered that the aerobic capacity of a child is smaller than in adulthood, and because of this endurance training has to be quantity-oriented, not power-oriented. (Autio, Nenonen & Louhiala 1995, 40.)

4.2.2 Technical skills

In Category 1 the goalies should the focus of training be in basic things, like learning the basic stance, basic goalkeeping positioning, principles of goalkeeper-specific skating and principles of catching techniques. (International Ice Hockey Federation 2008.)

Category 2 focuses on perfecting the basic stance and techniques of catching the puck. As new aspects come quick returns to the basic stance and moving in the basic stance, blocking saves with body and arms, basic stickhandling and basics of challenging the shooter and cutting down corners. (International Ice Hockey Federation 2008.)

Practicing with goalies from Category 3 should focus to perfect all technical skills from earlier categories (International Ice Hockey Federation 2008). Advanced stickhandling techniques should be introduced.

Categories 4 and 5 are already areas where specific technical skills are gone through in earlier stages. These age categories focus more on tactical skills of the goalie and on perfecting technical skills to the goalies own unique style.

4.2.3 Tactical skills

The youngest goalies in Category 1 have only one tactical skill they should learn and that is basic positioning (Finnish Ice Hockey Association 2009).

The actual teaching of tactical skills starts in Category 2. In this category the goalies should learn the first models to play different game situations. They also should learn to read the game so that they can do interceptions and play the puck according offensive and defensive principles of the team. (Finnish Ice Hockey Association 2009.)

In Category 3 the tactical aspects of the game refine also for the goalkeeper. He has to be able to take actively part in the team's offensive and defensive play through communication and playing around the net. (International Ice Hockey Association 2008.)

Goalies from Category 4 and 5 have to find advanced models for different game situations like penalty killing and rebound-control through movement and stick usage.

(Finnish Ice Hockey Association 2009 & International Ice Hockey Federation 2008.)

They also have to learn how to be as leaders inside the team (International Ice Hockey Federation 2008).

4.2.4 Mental skills

The objective of the coaching of mental skills is that the goalie recognizes his own mental strengths and that those are developed (Lamminaho & Westerlund 2010). Psychological skills are like physical skills and they can be taught, learned and practiced (Weinberg & Gould 2007, 248). Skills that athletes need are arousal regulation, imagery, self-confidence, goal setting and concentration (Weinberg & Gould 2007, 273-392).

For goalkeepers these are all very important. To teach these skills it is crucial that there is a trusting interaction between the goalkeeper and the coach (Lamminaho & Westerlund 2010). The building of this relationship should be started by the coach right at the beginning of the coaching relationship, and continued throughout the whole career of the goalie.

Goaltending in hockey is maybe one of the most demanding positions to play through the high level of pressure and stress (Miller 2001). Achieving ultimate sport performance is having the mind and body working together in perfect harmony (Goldberg 1998). According to Daccord (1998), professional goaltenders claimed that their mental skills contributed to their ability to stop the puck.

There are various mental skills the goalie can use during his game. Probably the most important one is concentration. Concentration is defined as the ability to focus on relevant task cues while ignoring distractions, and it is considered to be an important component of attention (Wilson, Schmid & Peper 2006). Effective concentration is a vital prerequisite of athletes achieving optimal performance (Moran 2004). Porter (2003) suggested that an individual's concentration abilities are dependent on the individual's motivation to maintain them.

Arousal is a general physiological and psychological activation varying from deep sleep to intense excitement (Weinberg & Gould 2007). Every athlete has his own optimal level of arousal which gives him a chance to achieve optimal peak performance. Anxiety control is a very important skill to develop for athletes in achieving peak performance (Cashmore 2002).

It is hard to teach mental skills for the goalies of Categories 1-3, but especially goalies of the older age categories need these skills to achieve their peak performance. Psychological skills training-programs (PST), conversations and understanding of the importance of mental training are crucial for the development of goalkeepers.

4.2.5 Physical skills

The goalkeeper needs physical attributes like speed, stamina, power, balance, agility and flexibility. The physical skills of the goalkeeper should be developed through a variety of sports. In Categories 1-3 the physical training should include basic sports and the development of physical literacy. (Canadian Sport for Life 2010.) Physical literacy includes as much jumping, running, throwing, playing, and catching as possible in the

ages between 8-12 years (Canadian Sport for Life 2010). During these years the ABC of athletics – agility, balance, coordination and speed – is developed. Specifically for goalkeepers during the first three categories emphasis should be given for agility, balance and coordination (International Ice Hockey Federation 2007). During maturation, at the beginning of the growth-spurt, especially coordination and speed can be reduced to a fast change in the body. Especially for goalies at this stage it is important to continue with coordination and speed-exercises, so that the development does not stop. In the older categories, after puberty especially strength-training should be emphasized (International Ice Hockey Federation 2007). The goalie coach can do physical practices with the goalkeeper individually, but mostly the goalkeeper can do the same exercises as players in his team.

5 Empirical part

5.1 Project planning

The project planning started with creating a big picture about the contents of the project, and what it would be. It also included the phase of deciding how much emphasis would be put to each area. The first step was to think what a starting goalie coach would like and need to know. One major factor was to make sure that all aspects are covered, that are essential for a new goalie coach.

The idea was that the manual would include basics of how to teach a goalie in different age categories, how to help the goalie coach to understand and teach mental skills and sport specific skills and how to coach a goalkeeper on every day basis in the team environment. The idea was also that the International Ice Hockey Federation could use this manual as education material and material that could be provided for various national associations for their educational purposes.

After the idea was clear what would be done, I started gathering information about existing literature, conversations with professionals from this area and about own experiences from my professional playing career. After this I had a strong foundation and started to work on the guidebook.

5.2 Project implementation

The progress in this work of writing the manual was always so, that I wrote down what I thought myself of the topic. After that I always discussed it with fellow goalie coaches and showed the text to them. If they had something to add or they wanted to change something I thought it over and made possible changes to it. I had help from four different goalie coaches in this progress.

I started the work of the manual with the part that was most familiar to me, the sport specific skills of the goalkeeper. The objective was to gather a comprehensive package of all basic techniques that are demanded in good and effective goalkeeping. It was meant to be as simple as possible, so that also a starting goalie coach, who does not have playing experience or experience in coaching, can also understand what key

points are in all techniques. I also discussed these techniques and styles with two professional goalie coaches and asked them what to include and what to leave out. After this I used pictures and simple listings to provide clear instructions of the future goalie coaches. In these sport specific skills I went through the basic stance, skating skills and positioning and all basic puck stopping techniques through three different styles.

I advanced from this section to the game situation skills of the goalie that was logic in the progress of the manual. This part included specific game situation movement skills and how to play different scoring situations. This meant basically the tactical skills of the goalie. In both categories the idea was to make it clear for the reader how the goalie should react in always changing game situations.

After this I started to work on the first sections of the manual which was the foundation of teaching and coaching the goalie. In this section I went through when to teach and what, the process of human learning, the importance of feedback and ways how to give it and different teaching techniques. During the writing of this section I examined my own work as a coach and tried to relate it to the process of writing. I also discussed this section with fellow coaches a lot. The objective of this section was to show the reader how a human being, in this case a goalkeeper learns new skills.

As the next chapter I started to write on the one about how to coach a goalie in games and in practices. The idea of the chapter was to give the reader a good idea about what is important to remember in everyday training with individuals inside a team. I also had in mind my own playing career in this chapter and I used my own experiences as sources. I approached the chapter through two different points of view. The one how to make team practices as efficient as possible for goalies and the one how to treat both goalies, the starter and back-up during games. The game-part had in it the ideology of rotating goalies and the ideas how the pulling of the goalie can affect the mind and performance of your goalkeeper.

The final chapter I completed was the mental coaching chapter. It focused on ways how to teach the goalkeeper to deal with factors like arousal regulation, motivation and

self-confidence. The objective of the chapter was to clarify for the reader what these factors are and how these can affect the performance of the goalkeeper.

5.3 Project assessment

The end result was a 49 page guide manual. The manual was divided into 5 sections.

I was pleased with the end result. I had the impression that I was able to include all relevant issues and facts that I wanted to bring into the manual in advance. For me the main concern was that the area about what the manual was so big. It was hard to try to narrow many things down just to basics without forgetting some crucial issues. The idea was that the manual had only basics in it, so at some points pretty hard lines had to be drawn. Ultimately the goal was that also total beginners could understand and use this manual.

I think that I was able to reach that goal and after a review from a few coaches and the IIHF the manual was sent to the IIHF and they have published and printed it out, so that it will be in use for the annual IIHF Development Camp 2011 in Vierumäki. After that it should be in use for all IIHF National Associations.

6 Summary and discussion

The biggest objective of the manual was to bring knowledge and understanding for starting goalie coaches. The idea was to make a manual that covered all essential factors of the goalies game and coaching him. I am satisfied with the end result and I think that this manual will help especially small ice hockey countries in their quest to enhance their coaching knowledge and quality.

At the beginning of the planning of this manual I kept in mind the view of the coach and the goalie. I wanted to make it to benefit both, starting goalie coaches through information and goalies through the enhanced skills of the goalie coaches. I think that idea can be seen in the manual.

The idea was also to include small aspects of mental coaching into the manual, because that is one of the most underrated areas in especially ice hockey coaching, but also one that has been understood to be one of the most important ones. Also one big factor that was included into the manual was the day-to-day work with goalies in team practices, because especially in teams without goalie coaches this side is often forgotten totally. I think this side was covered well.

The biggest challenge during the process was to narrow the focused areas down. Goalie coaching is a very wide area and it includes so many small details that it was hard to try to find out the most important ones. Maybe a more thorough planning could have helped this work, but a few times I had to change my point of views during the writing work. In some chapters I had to narrow the fact covered more down than I would have liked, and because of that the mental side training and game situation playing are really narrow. I still think that I found out the most important factors in these sections also.

The most challenging part of the manual was the mental training section. There is a lot of knowledge and written material about it, but to narrow it down to the most crucial factors was really hard. I tried to consult a few goalie coaches about this area, and none of them could say directly what to include and what to exclude. A few times I wrote

the chapter in a longer form and then again in a shorter one. The end result was the shorter form, because I think that everything that is as simple as possible is easier to understand for each reader.

The planning and writing of this manual was very educational for me. It brought me again to the roots of the game of the goalies, which I haven't focused on after I stopped my own playing career. It made me think of things that were clear to me from a different perspective and clarified many things. This process has helped me also in my own work these days as an ice hockey coach.

I hope this manual will be in everyday use especially in smaller ice hockey countries. The majority of the national associations who are members of the IIHF have pointed out the need for goalie coach education material, and this manual gives frames and basic information how to make the goalies game more efficient.

The idea is to use this manual in the future as education material in goalie coach courses that are organized by the IIHF or by national associations. The manual is also used on the Development Camp of the IIHF in Vierumäki in summer 2011 to educate the first goalie coaches by the IIHF. The goal is to educate for each ice hockey country own goalie coach instructors who can carry on the knowledge.

Bibliography

Autio, T., Nenonen, P. & Louhiala, L. 1995. Liiku ja Leiki [Move and play]. Gummerus. Jyväskylä.

Canadian Sport for Life. 2010. Long-term Athlete Development-resource paper. Canadian Sport Centers.

Cashmore, E. 2002. Sport psychology: The key concepts. Routledge. London.

Daccord, B. 1998. Hockey Goaltending. Human Kinetics. Champaign, Illinois.

Finnish Ice Hockey Association. 1998. MVJ-education material. Finnish Ice Hockey Association.

Finnish Ice Hockey Association. 2009. MVLT-education material. Finnish Ice Hockey Association.

Gallahue, D.L. & Donnelly, F.C. 2003. Developmental Physical Education for All Children. Fourth Edition. Human Kinetics. Champaign, Illinois.

Gallahue, D. L. & Ozmun, J. C. 1997. Understanding motor development. Infants, children, adolescents, adults. Mc Graw-Hill. New York.

Gendron D. 2003. Coaching Hockey Successfully. Human Kinetics. Champaign, Illinois.

Goldberg, A. 1998. Sports Slump Busting. Human Kinetics. Champaign, Illinois.

Harre, D. 1975. Valmennusoppi [Coaching knowledge]. 5. Edition. Gummerrus. Jyväskylä.

Heino, S. 2000. Valmentautumisen psykologia [Psychology of preparation]. Gummerus. Jyväskylä.

Goaltending responsibilities. (Mind In The Net Goaltending).

<http://www.mtngoaltending.com/articles/Goaltender%20Responsibilities.pdf>. (Read 4.1.2011).

Hockey Canada. 2004. Skills Development Manual : Goaltender. 2. Edition. Hockey Canada.

Holopainen, S. 1991. Taitavat ja kömpelöt koululiikunnassa [The skilled and clumsy in school sports]. Liikunnan ja kansanterveyden edistämissäätiö (LIKES). Liikunnan ja kansanterveyden julkaisuja 75. Jyväskylä.

International Ice Hockey Federation. 2007. Goalkeeping Tactical Level 3. International Ice Hockey Federation.

International Ice Hockey Federation. 2008. Goalkeeping Technical Level 2. International Ice Hockey Federation.

Kannus, L. 1985. Maalivahtipelin tekniikka [The technique of goalkeeping]. Forssa.

Kemppinen, P. & Sunila, S. 2005. Taitajan tie 2: Tanoke-valmennuksen käsikirja Osa 2 [The road of an expert 2: Handbook to exercising Tanoke Part 2]. Kannustusvalmennus P. & K. Vantaa.

Koivisto, A. & Piesanen, T. 1989. Taitavan maalivahtipelin analyysi jääkiekossa [An analysis of skillful goaltending in ice hockey]. Pro-gradu-thesis. University of Jyväskylä. Department of Sport Sciences.

Lamminaho, J. & Westerlund, E. 2010. Kokonaisvaltainen valmennus [Holistic coaching]. Education material. Finnish Ice Hockey Association.

- Mero, A. 1997. The basics of training. Mero, A., Nummela, A. & Keskinen K. (toim.) Nykyaikainen urheiluvalmennus [Modern coaching]. 141-166. Gummerrus. Jyväskylä.
- Mero, A 1990. Voimantuoton harjoittamisen peruseriaatteen [Basic principles of practicing power generation]. Mero, A., Vuorimaa, T. & Häkkinen, K. (toim.) Lasten ja nuorten harjoittelu [Training of children and young athletes]. Jyväskylä.
- Mero, A. & Pullinen, T. 1990. Nopeus ja sen harjoittaminen [Speed and development of speed]. Mero, A., Vuorimaa, T. & Häkkinen, K. (toim.) Lasten ja nuorten harjoittelu [Training of children and young athletes]. Jyväskylä.
- Miller, S.L. 2001. The complete player: The psychology of winning hockey. Stoddart Publishing. Toronto, Ontario.
- Moran, A.P. 2004. Sport and exercise psychology. Taylor & Francis Group. New York.
- Nevalainen, M. 2001. Jääkiekon maalivahtipeli [Goaltending in ice hockey]. Pro-graduate thesis. University of Jyväskylä. Department of Sport Sciences.
- Numminen, P. 1996. Kuperkeikka varhaiskasvatuksen liikunnan didaktiikkaan [A somersault to the didactics of sports of early education]. Lastenkeskus Oy. Helsinki.
- Nykvist, H. & Ekholm, S. 1996. Maalivahtipelin tekniikka [The technique of goaltending]. Finnish Ice Hockey Association.
- Schmidt, R. A. 1991. Motor learning & Performance. From principles to practise. Champaign, IL: Human Kinetics.
- Sinclair, G.D. & Moyls, P.W. Speed of response characteristics of goalkeepers: A descriptive and development report. Canadian Journal of Applied Sport Sciences 4 (1), 60-65.

Välimäki, I. & Helin, P. 1988. Kasvuikäisten urheilun erityiskysymykset [Special questions according sports for growing children]. Tuominen, K., Rusko, H., Viitasalo, J., Luhtanen, P. & Kujala, A. (toim.) Suomalainen valmennusoppi [Finnish coaching theory]. 375-384. Gummerrus. Jyväskylä.

Weinberg, R.S. & Gould, D. 2007. Foundations of Sport and Exercise Psychology. 4. Edition. Human Kinetics. Champaign, Illinois.

Westerlund, E. 1992. Jääkiekko on peli [Ice hockey is a game]. Education material. Finnish Ice Hockey Association.

Westerlund, E. 1997. Jääkiekko [Ice Hockey]. Mero, A., Nummela, A. & Keskinen K. (toim.) Nykyaikainen urheiluvalmennus [Modern coaching]. 527-544. Gummerrus. Jyväskylä.

Wilson, V.E., Schmid, A. & Peper, E. 2006. Strategies for training concentration. In J.M. Williams (Ed.). Applied sport psychology: Personal growth to peak performance. Fifth Edition. 404-422. Mayfield Publishing. Mountain View, California



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Foreword

Dear Goalie coach!

This manual has been made in order to make goalie coaching easier. It is designed for new goalie coaches who can get new ideas and thoughts out of this manual. Like always in hockey, remember that there is not only one correct way of doing things. This manual gives sight of different ways of teaching and educating your athletes to become better netminders.

The most important thing here is to understand the importance of the personal relationship you establish with your goalie. Goalie coaching is coaching individuals which are in their own way always unique. If you want them to reach their possible peak in their performance it is crucial to get to know them as persons. Through this the learning environment is a positive one. The coach should always remember that he is there for the athlete, and the athlete's success is the one that matters.

I have gathered information into this manual from several sources. I have used the goalie coach education materials of three different major ice hockey associations and summed up own experiences that I found out while playing as a professional ice hockey goalie in several European countries under top level goalie coaches. This manual is only a small view into the world of goalie coaching, but it gives a good start for all of you who are interested in getting involved in the fascinating world of goalie coaching.

A special thank you to two amazing hockey professionals, Logan Frison and Laura Rollins, who helped with ideas and talks in this process.

Tommi Niemelä

Introduction

An ice hockey team needs a good goalie to succeed. The goalie is the biggest single factor in the result of a hockey game. In the past years the knowledge of goalie training has increased significantly, and it has become clear, that every successful team needs a specific goalie coach. In this course there are five different sections we are focusing on.

- 1. How to teach the goalie**
- 2. Mental coaching of the goalie**
- 3. The sport specific technical skills**
- 4. Game situation skills of the goalie**
- 5. Coaching the goalie in practices and games**

A many-sided physical and motoric training on and off the ice ensures the possibility for the goalie to learn the techniques required by the sport and, above all to transfer the learned skills into the game. A good goal would be, that before the start of the growth spurt/puberty the goalie would know the sport specific skills. The learning of the sport specific skills is an ongoing process, which should be planned and followed systematically. A strong base of sport specific skills ensures that after puberty the goalie can change the technical skills in to game situation skills, which means he can make the right decisions in different game situations.

In order to develop the dexterity of the goalie, already learned movements have to be practiced in changing circumstances, because movements that have reached already the level of automation don't improve general dexterity anymore. One objective of goalie training is also combining the general sport skills, sport specific technical skills and the game situation skills. For goalies under 14 years of age the emphasize of training should be on the general sport skills and the sport specific technical skills,

However remembering, that versatile games on and off the ice develop the ability to apply the practiced skills in varying situations.

1.) How to teach the goalie

Probably the biggest factor in coaching is to teach new skills to your athlete or athletes. As a coach your objective is to make your athletes as good as possible in their area of the game. Often coaches think that they are better coaches the more they have knowledge of the field they are coaching. But this is not the case. You are just as good as a coach as good your athletes are. This means, that the things you teach don't matter, if your athlete does not learn it. This is the biggest thing a coach should always remember, when he is teaching new skills to his athlete.

All coaching with goalies has to be individual. All goalies develop in a different pace, and they have different abilities to perform. This is a big challenge for the goalie coach, because he has to remember that not every goalie he coaches can be put into the same style.

The goalie coach has to be aware of the development phases of different goalies. The biological age defines often in junior ages the quality of training. There can be even a difference of 4 years in the developmental phase of goalies, even though their chronological age is the same. The idea of what to train at what age categories has to be clear to every goalie coach who works with goalies who are still at junior levels.

In order to achieve a good learning environment for the goalie, the goalie coach has to develop a circle of trust between the athlete and the coach. This starts already during the younger ages of the goalies, and it is crucial for development of the goalie. The older the goalie gets, the more he thinks by himself. If there is no trust between the goalie and the coach, starts the goalie to rebel against his coach and does not perform as well as he could. The building of trust happens always through interaction between the goalie and his coach. Honesty is paramount in this case.

1.1 Age categories

The goalies development happens through certain phases which are linked to the age of the goalkeeper. It is impossible to say directly what to teach and when, but it is possible to make some thumb rules according the ages of the goalie.

The IIHF (International Ice Hockey Federation) has classified youth hockey for players under 16 years old, and junior hockey for players under 20 years old. Within these age groups each National Association further divides these classifications into categories (teams) to fit the requirements and demands within their country.

- ▶ The following examples of age category breakdown may be used in developing your goalkeepers.
 - ▶ Category 1 = up to 12 years
 - ▶ Category 2 = 12-14 years
 - ▶ Category 3 = 14-16 years
 - ▶ Category 4 = 16-18 years
 - ▶ Category 5 = 18-20 years

Category 1

The base of all movement techniques has to be built in this phase. Other major principles that should be emphasized in this age category are:

- Basic stance (stand-up and butterfly)
- Basic goalkeeping positioning
- Learn basic techniques of goalkeeping and player skating
- Principles of catching techniques
- Proper execution of the two-pad slide and leg splits

Category 2

In this phase the coach has to recognize the fact of physical maturation that happens in goalies in these ages. This means also physical growth, which often leads to problems in coordination and movement. Sport-specific skills that should be gone through in this phase are:

- Perfecting the basic stance
- Quick return to the basic stance
- Technique of moving around the net while maintaining your basic stance
- Technique of skating outside of the net
- Perfecting techniques and tactics of catching
- Catching the puck while executing the two-pad slide and leg splits
- Blocking shots with the body
- Blocking shots with the arms
- Becoming familiar with the principles of cutting down the shooting angle

- Basic use of the stick
- Technique of challenging the shooter

Category 3

The ending of puberty affects to emotional and physical changes, and because of this it is crucial that the goalie coach can either build, or that he has already built a trusting relationship with his goaltender. Sport-specific skills that should be gone through in this phase are:

- Perfecting the techniques outlined in categories 1 and 2
- Blocked view (screen)
- Play behind the goal
- Refining the use of the stick
- Communication with team mates
- Activity in the game and joining the attack
- Blocking shots by performing a butterfly and leg splits
- Blocking shots in complex game situations (timing and precision of action)
- Coordination of movement during personal physiological growth

Category 4

In this phase the goalie starts to build up his own personal life and his future. The goalie coach should recognize the abilities of the goalie and guide him towards the right direction also in the goalies personal life. This means home, social relations and education. When all these factors are in a good shape it is possible to develop also the sport specific skills into perfection.

Sport-specific skills that should be gone through in this phase are:

- Perfecting the techniques outlined in categories 1, 2 and 3
- Controlling rebounds and deflections
- Blocked view (screens), cutting down the shooting angle
- Passing the puck from the area behind the goal
- Perfecting the use of the stick, faking a play, and forehand and backhand passes
- Integrating the goalkeeper into the team tactics and system
- Perfecting the blocking of shots by all methods and reducing puck deflection
- Being pro-active in one-on-one situations

- Exploiting the goalkeeper's positive attributes
- Quick return to the basic stance without the use of the hands
- Be a leader in the locker room

Category 5

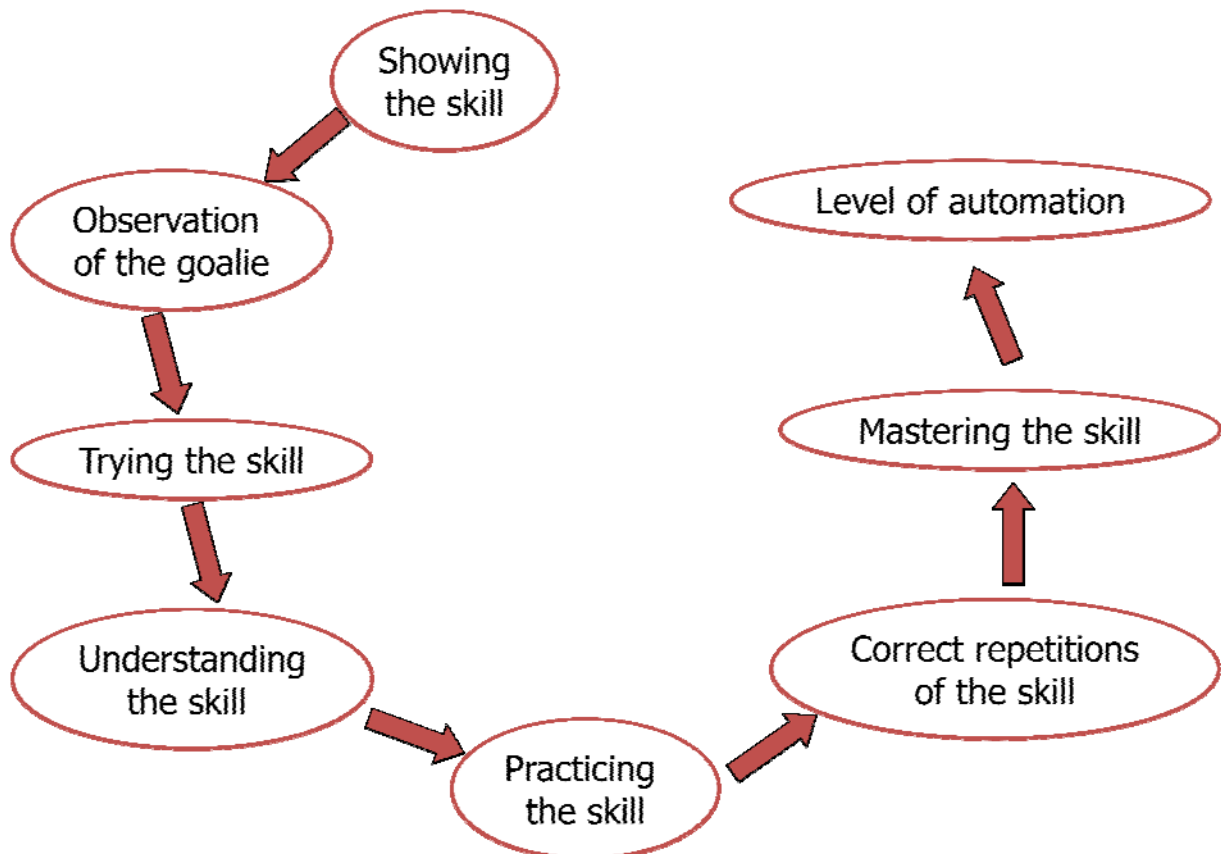
When the goalie has reached adulthood he should be able to make own decisions according his personal life and his future. The goalie coach's work becomes more pedantic and the focus on smaller details inside the game is more important. Sport-specific skills that should be gone through in this phase are:

- Perfecting all of the activities in categories 1, 2, 3 and 4
- Creating an optimal personal stance
- Adapting the style of catching and developing individual priorities to fit the goalkeeper's personal style and strengthen it
- Have input into the development of practice plans (e.g. goalkeeper drills)
- Become involved in team play (e.g., initiating the breakout)
- Development of the ability to "read and react" (anticipation)
- Speeding up movement and thought processes
- Perfecting goalkeeper-specific skating
- Being a leader in the locker room

1.2 Process of learning

The process of learning can be shown best in the following picture (Picture ?)

Figure 1



The levels of learning skills can be divided into five categories:

1. *Observation phase*

In this phase the first idea and thought of the movement comes up. In this phase earlier movement experiences and observation and understanding abilities help a lot.

2. *The rough-motor phase*

This is the phase of experiencing. The goalie should learn the basic techniques so, that he is able to do entire saving-sequences. The technique-training should be made playfully. It should be made only short periods of time at once, but often. This phase should be used to goalies of ages 9 to 11.

3. The fine-motoric phase

The goalie masters his movements and can do them precisely. The use of power is right and the rhythm of the saves is suitable. The ages of goalies should be from 11 to 14.

4. The phase of automation

The coordination of movements has established solid base. The goalie doesn't have to think about techniques, it happens unconsciously. The attention can be focused onto happenings in the game. The goal would be to reach the level of automation between the ages of 12 to 14. The movement patterns of a skilled goalie are all based on the level of automation. At this level the amount of technique-training should be large.

5. The phase of alternating the skills

At this stage the technique is mastered completely. The goalie uses movements varyingly he has learned, in different game-situations and he is able to combine different movement patterns to each other. The age should be upwards from 15 years old goalies.

1.3 Giving feedback

When you think about your way to give feedback to the goalie remember to do it positively. If the goalie gets feedback also constructively in a positive manner, he trusts his own abilities more. You can always find good things in every performance – emphasize these. This builds up a good learning environment and that builds up motivation for the goalie. Develop for yourself a philosophy of giving feedback that you use with all your goalies similarly. Give always the feedback right after the performance of one set and sometimes also during the set. Give it sincerely and naturally and about the performance, not about the person who is performing. You can give feedback by various ways like words, gestures, with eyes, by touching etc. It is important also that the goalie himself gives feedback about his own performance right after the set. This increases the goalies abilities to analyze his own performance.

The eye for mistakes develops through experience. When you start correcting things in the goalies game, make it so that you correct first the most general and the most crucial mistake that is influencing the end result of his doing. Don't go into the smallest detail before the goalie is able to understand himself the idea.

Remember to let the goalie do always a few repetitions of the technique he is performing before correcting it. It is beneficial for the coach, because then he can divide the reason and the consequence first. Through that he can define the real reason for the mistake. It is really

important to give always positive feedback and information about a correct performance. That increases the self-confidence and knowledge of the goalie towards his own game.

Remember that the mistakes should be erased through correct repetitions. This might take sometimes a long time, but patience is acquired at those times.

1.4 Teaching techniques

When you teach techniques to a goalie it is crucial to remember a few things. You should never include more than two different technique-sections into one teaching session. The goalie is not able to process more information during one session. No new techniques should be taught if the goalie is already tired when you start the goalie-session.

These different technique-sections should exclude each other. A good example would be that you don't teach techniques of stand up-saves and saves on ice at the same time. This confuses the goalie, and doesn't give the possibility to focus clearly on the key points of one particular technique, e.g. stand up-saves.

There has to be enough shots per one saving technique in order for the goalie to get the idea of the movement. A good amount would be 15-25 shots per saving technique, 6-10 shots if there is moving and a saving technique combined. At least 3 sets should be made in order to get enough repetitions. In order to reach a total level of automation 10000 repetitions per save are demanded. The strength of the shots the goalie coach is making should be always adjusted according to the skill level and the age of the goalie.

The rhythm of the shots has to be made by the goalie. Always a good concentration to each shot is crucial for the learning process. After the save there is no hurry for the goalie, and he should start again when he is ready. There should be always a sequence in the doing of the goalie > performing the save, a quick self-evaluation, concentrating on the next save, readiness.

When making corrections to the techniques of the goalie the coach should always wait at least five shots before correcting. This gives the goalie time to first try the process by himself. When trying to correct the goalie it would be very good to give first positive feedback about something the goalie had done well during the drill.

When you teach techniques you should always strive towards and demand PERFECTION!

2.) Mental coaching of the goalie

“The biggest enemy of the goalie is the goalie himself, nothing else. Stress and anxiety. The fear and shame of failure. A top goalie knows his neurosis and controls them.”

Ken Dryden

2.1 Interaction

There are many ways of helping the goalie mentally. One of the biggest aspects of goalie coaching is just being there for the goalie. Often goalies have to deal with so big external pressures, that already someone who is able to understand and listen is a very big thing to enhance performance of the goalie. It is a common mistake to think that mental coaching would be the process of the athlete to lie on a sofa and talk about his deepest feelings and fears. Mental coaching should be just a part of holistic coaching. There the process starts with the building of the trust-relationship between the coach and the goalie. This happens through talks over all aspects of the sport. If the goalie feels like he wants to share even more, the goalie coach has to be ready to listen. On the other hand, the goalie coach should not press the goalie to share things he doesn't want to.

2.2 Stress regulation

On major factor of mental coaching is the teaching of the skill to relax and focus on the task in hand. Directly related to this is the skill of stress regulation, which is especially important for goalies on higher levels. This means how a goalie can find his optimal stress level, where he performs at his best. The coach should be aware of the fact, that some persons need to be very stressed in order to perform well. Some on the other hand have to be very loose and relaxed. This is again a process of getting to know your athlete better. Encourage your goalie to explore his own feelings, and study them after the game. If the game has gone well, was he stressed before the game or not? In able to help the goalie to regulate his stress levels it is important that the coach knows his athlete. Does he need only encouragement or does he need some pressure on him to perform well? Again this comes through experience with the athlete.

2.3 Motivation

The motivation to practice comes through goals to achieve. The goalie has to have a clear goal that he tries to achieve. Through this he understands why he does his work every single day, and he is ready to put himself into the task. The goalie coach should always remember that intrinsic motivation is always a better than extrinsic motivation. This means that the athlete's motivation comes from the inside of him, the joy of working and playing the game. If the athlete obsesses an extrinsic motivation, which means motivation that comes from the outside e.g. money, prizes and stardom, at some point if the athlete can't reach these goals he loses his motivation and playing stops. Always emphasize for the goalie that he has to have a goal that he tries to reach, but he should enjoy more the way with what he reaches the goal than the goal itself.

2.4 Self-confidence

The goalies performance depends very much of his self-confidence level. Especially on top levels the difference between the skills of goalies are so small, that the one who is more confident with his style and his game is the one who comes out of the game as a winner. This is why the goalie coach has to have certain tools to raise up the confidence levels of his athlete.

A person feels confident in all situations of life if he feels safe, secure and he knows what he has to do and what he is doing. This is why going through the game in advance is a good way of raising up the goalies self-confidence. Going through possible scoring chances and how to solve them is a good tool. Also telling the goalie how well he has been able to save certain kind of shots and how well he has played in the last game is good way. Don't be afraid to go through also problematic situation in which the goalie has had problems in earlier games. This gives the goalie a feeling of security that he knows what he must do better. The biggest thing is to make the goalie believe in himself.

3.) Sport specific technical skills

In able to play effectively at any stage, the goalie has to master certain basic skills that help him to make saves during games. These skills can be divided into technical and tactical skills. In this section the basic technical skills will be gone through.

3.1 Basic stance

The basic stance of a goalkeeper must allow for optimal balance, mobility, comfort and speed of movement. The basic stance is very important and emphasis should be placed on all the elements of this skill. There are different styles of goalkeeping, but all must have the common characteristics of the basic stance. Every single movement and save starts from the basic stance. Standing in the basic stance should also be emphasized in off-ice training.

Figure 1- Basic stance



Key points:

- Feet should be spaced approximately shoulder width apart, sometimes wider.
- Knees and trunk need to be flexed slightly forward with the weight of the body on the balls of the feet. Power required for lateral movement is available in this position.
- The shoulders, knees and front part of the feet should be joined by an imaginary vertical line.
- The back needs to be as straight as possible to keep the balance in the upper body.
- Head must be up and constantly watching the puck and/or play.
- Catching glove is held open at the side and slightly in front of the knee. The blocker and catching glove should be held slightly in front of the body allowing the goalkeeper to see and move hands freely.
- The goalkeeper's stick should be held firmly with one hand at the top of the shank. (Thumb behind body of stick to prevent it from turning in hand when blade is hit.)
- The blade of the stick needs to be flat on the ice, approximately 25 to 30 cm in front of the skates to decrease rebounds.

3.2 Skating skills

The importance of skating skills to the goalkeeper cannot be stressed enough. By mastering the necessary skating skills, a goalkeeper can execute movements with speed and precision. In addition, when a goalkeeper can skate properly, he can face the puck at all times and concentrate fully on stopping the shot. The skating skills for goalkeepers are very specific in nature because of the uniqueness of this position and the equipment that is worn.

3.2.1 Lateral movement

There are two basic methods a goalkeeper can use to move laterally while remaining on the skates: the shuffle and the T-push. These two should be used according to the situation needed in the game. Especially for junior goalies the fact should be remembered, that the shuffle is harder to execute for juniors, but should be practiced as much as the t-push.

The shuffle

The shuffle is the preferred technique as the goalkeeper is able to maintain the basic stance, be square to and on the centre line of the puck. This technique is used when following the play as it moves laterally across the ice surface. The goalkeeper moving from left to right using the shuffle is illustrated. The basic stance should be maintained in all lateral movements.

Figure 2 – The shuffle



Key points:

- *Right skate is slightly unweighted and pointed forward*
- *The left leg (inside edge) needs to be pushed to initiate the left to right movement. In situations requiring minor lateral adjustments, goalkeepers should use short lateral shuffles of approximately 25 to 30 cm in length.*
- *In some situations, for example, the puck moving quickly from one corner to the other behind the net, the goalkeeper may need to shuffle from post to post in one long move.*

The T-push

The T-push is a long and fast lateral movement. It is generally used when moving from one post across the crease to the other post when there is no chance of a shot, or when speed of movement is the main priority.

The T-push, despite having some disadvantages, is often used by young goalkeepers because it is a relatively easy method of moving from side to side. Remember to emphasize for young goalies, that the shuffle has more advantages, and should be learned first. Advanced goalkeepers may employ a T-push technique while reacting to the puck or play in situations where no shot is imminent. A left to right example of a T-push is illustrated here.

Figure 3 – The T-push



Key points:

- *Right leg must to be rotated outwards and parallel to the goal line.*
- *Left leg needs to be extended and pushed (inside edge) off the ball of the foot.*
- *Right leg (initially the gliding leg) needs to be rotated inward for stopping action.*

3.2.2 Forward and Backward movement

As important as lateral movement is the ability to move into and out of the goal. Especially in tactical aspects of the game, like in challenging and positioning, the ability to move forward and backward is important. There are two similar ways to move forward and backward, telescoping and sculling.

Telescoping

Telescoping is effective in moving under control both out of and back into the net while maintaining the basic stance. The skates do not leave the ice during such short thrusts, thus providing a quick technique with which to challenge the shooter or assume proper positioning. Telescoping is used more when there is not an imminent shot coming towards the goalie, and when the puck is on other areas of the ice than in the own defensive zone.

Sculling

Goalkeepers should develop the ability to scull with either foot depending on the game situation. For example, when the puck carrier is approaching from an angle, the goalkeeper should scull with the skate furthest from the puck and glide on the short side skate. This technique ensures the goalkeeper continues to protect the short side. Goalkeepers should be capable of covering the required distance with one or two pushes; therefore, power and efficiency of movement are essential.

Figure 4 – Forward sculling



Key Points - Forward:

- Both knees are bent
- Toe is rotated slightly outward
- Quick, forceful heel push is performed with the inside edge of the rotated skate (skate stays in contact with ice)
- The gliding leg is pointed in the desired direction.
- The basic stance is maintained throughout the movement

Figure 5 – Backward sculling



Key Points - Backward:

- *Toe of one skate is rotated inward.*
- *The weight of the body is placed on the toe of the rotated foot and a forward thrust (e.g., toe push) occurs forcing a backward motion.*
- *The weight is then transferred to the gliding leg and the basic stance is re-assumed*

3.2.3 Down and Up Movement

Although it is ideal for goalkeepers to remain on their feet, occasionally situations arise which force them down onto the ice. It is therefore essential for goalkeepers to learn the most effective method of returning to their feet.

First, the goalkeepers must, whenever possible, avoid ending up on their back or in a sitting position. These situations force the goalkeeper to make several movements and use precious time in reassuming the basic stance position.

In this chapter, only down and up movement from the knees is covered, as this is the most frequent down position, and it is the intermediate stage of the up movement from other down positions.

- 1.) In most instances, the goalkeeper falls on one or both knees. Even in this position, the goalkeeper must maintain a basic stance position with the upper body. To return to the standing position a goalkeeper must; move the skates outwards thus fanning the legs and press the heels down against the ice.
- 2.) Lean the upper body back until the knees begin to lift off the ice.
- 3.) Continue lifting the knees and quickly lean the upper body forward and placing the weight onto the toe of the skate blade.
- 4.) Bring the feet closer together and assume the basic stance. Another method of regaining the standing position is; Lean slightly forward with the upper body.
- 5.) Leave one knee on the ice while drawing the other knee up and subsequently placing the skate blade on the ice.
- 6.) Extend this leg to lift the opposite knee off the ice.
- 7.) Assume the basic stance position.

3.2.4 Positioning

After learning the necessary skating skills, a goalkeeper is then ready to approach a very important aspect of the game: positional play. Goalkeepers must position themselves in relation to the puck, the puck carrier and the net.

Proper positioning, also referred to as “playing the angles”, is essential at all times. The basis of positional play is to take away as much of the net as possible in relation to the puck.

When learning proper positioning, the goalkeeper must understand the following theories:

1. Centre Line
2. Horizontal Angle
3. Short Side

An exercise that can be done to help the goalkeeper understand these theories is by using thick elastic bands that are held by a coach 3- 5 meters away from the goal line. The goalkeeper is inside the bands and shown the angle theories in reality. It is important to let the goalie see himself how his positioning affects the free space in the net.

1. Centre Line Theory

The centre line theory is an excellent method of teaching positional play.

Figure 6 – Centre Line Theory

	<ul style="list-style-type: none">• <i>When positioned properly, an imaginary line can be drawn from the puck to the mid-point of the goal line.</i>• <i>At all times, the goalkeeper must assume a position on this line in order for this principle to be effective.</i>
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2. Horizontal Angle Theory

When the puck is directly in front of the net and the goalkeeper is back in the goal crease the shooting angle is at its maximum as are the available shooting space (holes).

The farther out of the net the goalkeeper comes; the better is his position. The goalkeeper must remember that he should not come out so far that a quick return to the net cannot be performed, should the game situation changed.

The distance a goalkeeper comes out of the net to play the angles is determined by the options of the puck carrier, the position of other opponents, and the goalkeeper's skating speed and mobility.

Figure 7 – Horizontal Angle Theory



Goalie in the net – many "holes"



Goalie moving out towards the puck

3. Short Side Theory

The short side theory is an exception to the centre line theory and is an advanced technique. When a shot is coming from a sharp angle, (e.g., outside the face-off spots) the short side technique is very effective.

The goalkeeper covers the short side (the side closest to the puck carrier). This forces the puck carrier to shoot across the goalkeeper's body to the far side of the net. By cutting off the short side, all indecision is removed. The shot or deke must go to one side, therefore, the goalkeeper is required to move in only one direction. The decision making process is simplified. The goalkeeper's body must always be square to the puck. The arms are compact to the body.

Figure 8 – Short Side Theory

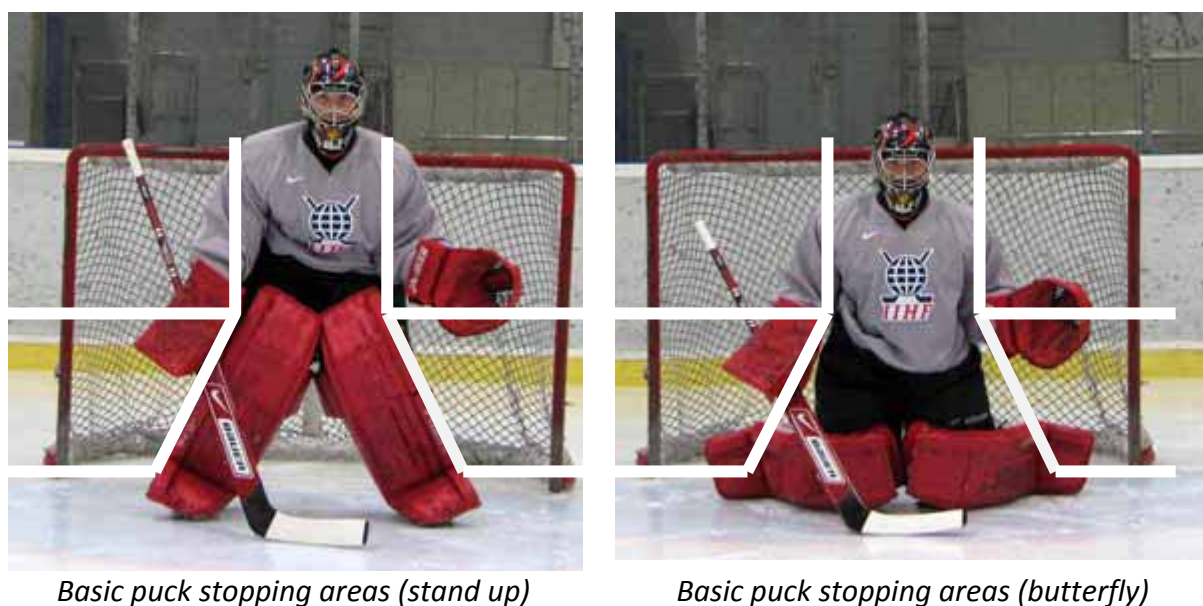


Short Side Theory

3.3 Basic puck stopping skills

If a goalkeeper is able to maintain a proper basic stance in the correct position, they will be in position to block most shots taken at the net. However, because of the speed at which the game is played, this ideal situation does not always occur. This is why goalkeepers should know how to stop shots in a basic stance and down on one's knees (butterfly or half butterfly save).

Figure 9 – Basic puck stopping areas



The saves that can be used in each of the three save areas are outlined below:

1.) Low Shots on both sides

- stick saves
- half butterfly saves
- butterfly saves

2.) Mid Height Shots on both sides

- standing saves
- half butterfly saves
- butterfly saves

3.) High Shots on both sides

- standing saves
- half butterfly saves
- butterfly saves

1.) Low Shots on both sides

Remember that the stick should be 25 to 30 cm in front of the toes of the skates to absorb the impact of the puck, thereby reducing rebounds. When the puck is not shot directly at the goalkeeper, the blade of the stick must be slanted in order that it remain flat on the ice and

be placed in the path of the oncoming puck. The basic stance is modified very little during a stick save.

Stick saves (low shots)

The movement of the stick is initiated by the shoulder. The stick is turned at a slight angle so that the puck is deflected into the corner and away from the front of the net.

Figure 10 – Stick saves low shots (stand up)- both sides



Key points:

- Eyes on the puck
- Stick must be kept flat on the ice during the entire movement,
- Leg in a position behind the stick as security,
- Body weight needs to be changed to the save side leg and the puck should be directed smoothly to the corner
- Puck must be followed throughout the save with head and eyes

Half butterfly saves (low shots)

This technique is used to cover one low side of the net. It is similar to the butterfly save except that only one leg is extended while the other acts as a support. It is fairly common style for a goalkeeper that is not quite flexible from their hip joints. This kind of stopping style can leave room for players to shoot underneath the pads.

Figure 11 – Half butterfly saves low shots – both sides



Key points:

- Eyes on the puck
- Stick should be kept flat on the ice during the entire movement
- Pad needs to be placed behind the stick as a security
- Upper body must be turned towards the puck direction
- Puck must be directed smoothly to the corner
- Puck must be followed throughout the save with head and eyes

Butterfly saves (low shots)

This technique is frequently used to cover both low corners at the same time. It is the most modern and particularly effective in defending against low screen shots, possible deflections, and dekes. However, a chance for rebounds in front of the net is possible.

Figure 12 - Butterfly saves low shots – both sides



Key points:

- Eyes on the puck
 - The knees must be placed on the ice behind the stick and the ankles are flat to the ice with toes extended out towards the sideboards.
 - The face of the leg pad is vertical to the ice (ensuring no portion of the goalkeeper's leg is exposed to the puck, the vertical pad provides more stoppage area).
 - The catching glove should be at waist height over the extended pad. The blocker should be kept at the same height on the other side.
 - The stick blade should be flat on the ice
 - The shoulder should be dropped a bit from the puck side in order to make the save smooth
 - The stick is approximately 10-25 cm in front of the pad
- Puck must be followed throughout the save with head and eyes.

2.) Mid Height Shots on both sides

This area of the net is one of the most difficult areas to defend as it requires a combination of saves from all three areas of the net. Following are three save techniques which are particularly effective in defending this mid height area of the net. The choice of save technique depends on each goalkeeper's style and the tactical situation.

Standing saves (mid height shots)

This technique is frequently used when the puck is shot from the far distance without any danger of deflections or screen.

Figure 13 – Standing saves mid height shots – both sides



Key points:

- Eyes on the puck.
- Remain in the basic stance position.
- Hands and pads need to be positioned perpendicular to the oncoming puck.
- Knees should be bent forward slightly.
- The slight move towards the puck is initiated from the support leg.
- The hand (glove or blocker) need to be moved together with the sliding leg in front of the body.
- The puck side shoulder should be dropped down a bit and the body weight moved on the leg of the save side.
- Puck must be caught or deflected in to the corner away from the danger area of the net.
- Puck must be followed throughout the save with head and eyes

Half butterfly saves (mid height shots)

This save is the trademark of the famous Russian goalkeeper Vladislav Tretjak. Movement is initiated with the inside edge of the support leg skate. The puck is stopped with the glove or blocker in front of the pad, not just with the pad any longer in order to reduce the amount of the rebounds.

Figure 14 – Half butterfly saves mid height shots – both sides



Key points:

- Eyes on the puck
- Movement needs to be initiated with the inside edge of the support leg skate
- The body weight should be leaned slightly over the straight knee.
- The stick should be kept between the knees
- The upper body should be moved over top of the leg which is supporting the save.
- Puck must be caught or deflected away on the top of the pad with catching glove or blocker
- Good body control must be maintained throughout the save.
- Puck must be followed throughout the save with head and eyes

Butterfly saves (mid height shots)

This technique is mostly used by the modern goalkeepers. It covers the whole low part of the ice and leaves only space for shooters to beat them with a perfect shot to the up corners of the net. With this style of a play, one needs to be very elastic and flexible in order to do these saves smoothly and correctly.

Figure 15 – Butterfly saves mid height shots – both sides



Key points:

- Eyes on the puck
- The knees must to be placed on the ice behind the stick and the ankles are flat to the ice with toes extended out towards the sideboards.
- The face of the leg pad should be vertical to the ice
- The glove should be held at waist height over the extended pad.
- The blocker is at the same height on the other side.
- The stick blade should remain almost flat on the ice
- The shoulder should be dropped down a bit from the puck side in order to make the save smooth on top of the pad
- Hands must be kept close to the body in order to avoid unnecessary openings between the hands and the rest of the body
- Puck must be caught or deflected away from the danger area of the net.
- Puck must be followed throughout the save with head and eyes

Blocking with the body (mid height shots)

The goalkeeper should use of their body to stop the puck whenever possible. This is a good puck stopping technique because this technique does stop the initial shot basically every time. Also, with the proper technique the amount of rebounds is very low. To enable the goalkeeper to block with their body they must have confidence in the protective quality of the equipment.

Figure 16 – Blocking with the body - mid height shots



Key points:

- *Eyes on the puck*
- *The knees are on the ice behind the stick and the ankles are flat to the ice with toes extended out towards the sideboards.*
- *The face of the leg pad is vertical to the ice*
- *Puck must be stopped with the mid section of the stomach (midriff)*
- *Arms must be drawn close to the body.*
- *Body must be slightly bent forward on impact and immediately puck must be smothered with the arms to avoid rebounds*

3.) High shots

As most of the goalkeepers nowadays play with the butterfly style, shooters have started to shoot higher in order to find open spots. That is why it is crucial for goalkeepers to be able to stop shots aimed for the top corners.

Standing saves (high shots)

Catching shots with the catching glove is easier and safer than blocking with the blocker as the glove closes on the puck at the point of impact. This cuts down on rebounds.

Goalkeeper cannot underestimate the importance of the blocker. It is as important as the catching glove.

Figure 17 – Standing saves high shots – both sides



Key points:

- Eyes on the puck
- Puck cannot be grabbed at. It must be allowed to come to the glove
- Catching glove must be open at the side, slightly in front of the body and above the knee.
- Catching glove must be used when the puck is on the body midline or on the catching glove's side to avoid rebounds
- Puck must be followed throughout the save with head and eyes



Key points:

- Eyes on the puck
- Blocker must be placed in the path of the oncoming puck
- A slight rotation of the right wrist (e.g., slight rotation of hand in clockwise direction) changes the angle of the glove and the puck is deflected into the corner of the ice.
- To avoid rebounds the blocker should not be "punched" out at an incoming shot
- Bringing catching glove across the body must be avoided, except in situations where a stoppage of play is desired.

Half butterfly saves (high shots)

This style is used for the goalkeepers that are not flexible enough to use the butterfly style. However, this style does leave extra holes for shooters (between the pads and between the arm and pad). That is why the importance of timing is a key factor with this technique.

Figure 18 – Half butterfly saves high shots – both sides



Key points:

- Eyes on the puck
- Movement is initiated with the inside edge of the support leg skate
- The body weight is leaning slightly over the straight knee.
- The stick is between the knees which is on the ice
- The upper body moves over top of the leg which is supporting the save.
- Puck must be caught or deflected away on the shoulder height
- Body control must be maintained during the save at all times and avoid leaving unnecessary holes between the pads and between the puck side hand and a pad.
- Puck must be followed throughout the save with head and eyes

Butterfly saves (high shots)

When a goalkeeper is on their knees, they should be able to stop high shots. This kind of puck stopping technique demands great flexibility and balance, straight back, and quick hands.

Figure 19 – Butterfly saves high shots – both sides



Key points:

- Eyes on the puck
- The knees are on the ice behind the stick and the ankles are flat to the ice with toes extended out towards the sideboards.
- Stick is approximately 10-20 cm in front of the pads
- The face of the leg pad is vertical to the ice (in addition to ensuring no portion of the goalkeeper's leg is exposed to the puck, the vertical pad provides more stoppage area).
- The puck stopping side is at shoulder height over the extended pad. The other side is a bit lower height. The stick blade remains flat on the ice
- The blocker and catching glove should both be held slightly in front of the body allowing the goalkeeper to see and move hands freely up and down.
- Hands must be kept close to the body in order to avoid unnecessary openings between the hands and the rest of the body
- An upright body position must be maintained with the weight slightly forward, however, back must be as straight as possible in order to cover top corners.
- Puck must be followed throughout the save with head and eyes

4.) Game situation skills of the goalie

The game situation skills of the goalie can be divided into two sections. One is the game situation movement skills and one is how to play different kind of scoring situations. These two sections are closely looked at in this section of the manual.

4.1 Game situation movement skills

The basic movement skills that were gone through in the sport specific technical skill-section are the ones the goalie has to be able to use in different game situations. A big question is that what are game situation movement skills? It is easy to say that they are movements in front of the net using all possible technical skills and they are the skating skills used in participation to the game around the net area.

The goalies game is to be at the right place at the right time. If this can be successfully completed the possibility of saving the puck is much bigger. The goal in game situation movement is to be always in all situations between the middle of the net and the puck. A few things should be emphasized when you practice game situation movement skills in practice.

1. Always start from the basic stance and return to the basic stance.
2. Start the movement always from the post, from the middle of the net or from the top of the crease.
3. In practice there should always be also remembered the goalies participation to the game e.g. pucks from the boards.
4. In the beginning the movements should be practiced without pucks so that the movements reach a level of automation. This makes it possible to make the movements always in the same way. When you can see that the technique starts to improve it can be brought into the game through pucks.

When you practice game situation skills it is important to remember that during games there can be even long times that the goalie has to move in front of the goal. This means that the goalie has to develop an economic way of moving. This can though lead easily to laziness and that has to be avoided. The biggest thing still always is to stop the puck, in any means necessary.

4.2 How to play different kind of scoring situations

Figure 2 – Sport specific skills of the goalie



It is important to teach the goalie to know in advance certain routines and patterns in different scoring chances of the opponent. These can be then used automatically by the goalie, and varied by his own decision making process. Through these routines the decision making process is faster.

Scoring chances can be divided into ten different situations:

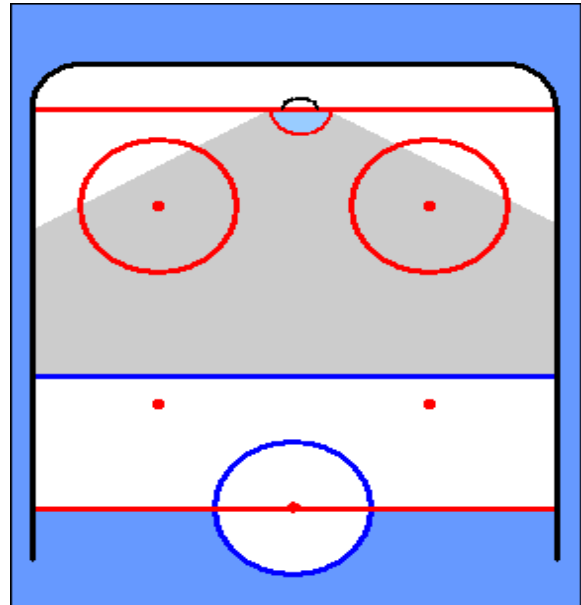
1. Basic shot
2. A one-timer from a pass behind the goal-line
3. A shot from lateral movement
4. One-timer from a lateral pass
5. Player coming directly to the net from behind the net
6. Player striving towards the net from the high circle from a 1vs1-situation
7. A shot with traffic in front of the net
8. Deflections
9. Rebounds
10. Breakaway

Each of these situations has its own key points to remember.

1. Basic shot

Picture ?? – Basic shot

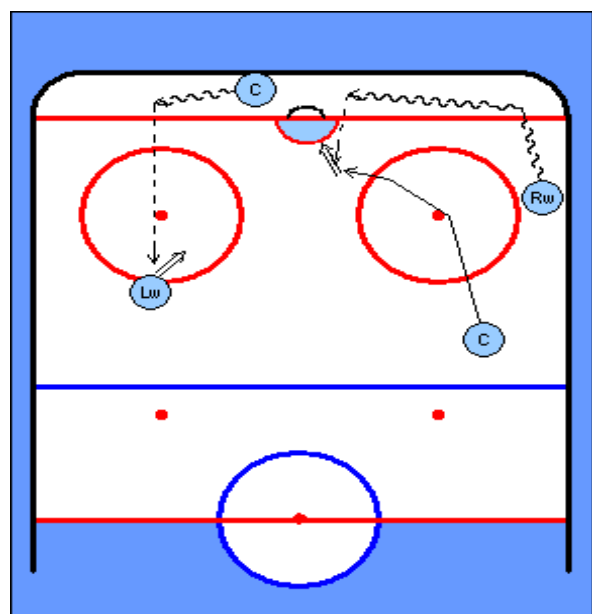
- The goalie has to try to stay in his basic stance as long as possible, and not anticipate a shot too early.
- Saving the puck through the basic puck stopping technique that needed.
- Positioning and challenging the forward boldly up on the crease.
- The goalie has to notice the saving control of the puck and continuing the game.



2. A one-timer from a pass behind the goal-line

Picture ?? - A one-timer from a pass behind the goal-line

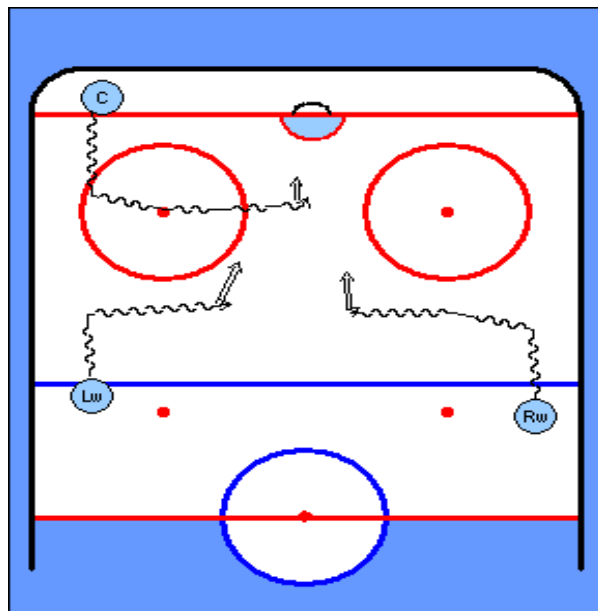
- The goalie intercepts all passes which go through the crease.
- Movement and positioning according the place of the puck.
- Shots coming from above the circle should be saved through stand-up saves.
- In close-range situations the goalie should come powerfully out of the net and make the save through covering as much space as possible. In small angles through stand-up saves or through the basic puck stopping saving technique that is needed (butterfly or half-butterfly).



3. A shot from lateral movement

Picture ?? - A shot from lateral movement

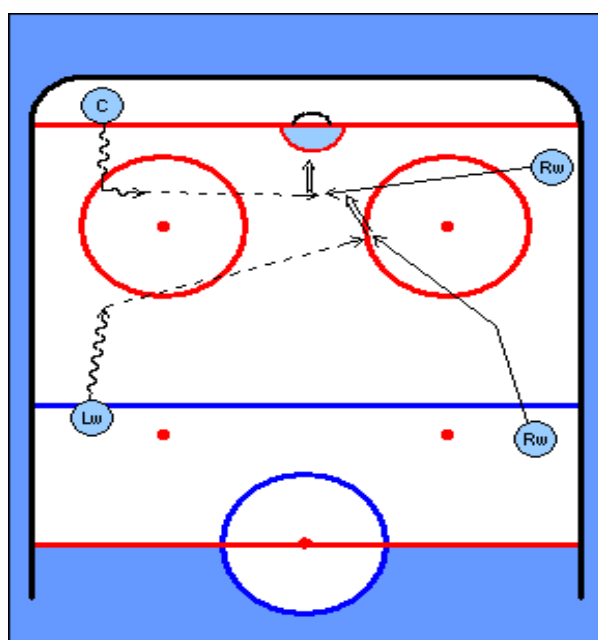
- Moving in front of the net through shuffling (when the puck is far from the net the goalie can use also the T-push).
- Positioning according to the puck.
- Close-range situations have to be played through covering as much space as possible through butterfly-slides. The stick should cover the whole ice surface.
- Situations from the high slot should be played through stand-up saves, if needed use the butterfly or the half-butterfly.



4. One-timer from a lateral pass

Picture ?? – One-timer from a lateral pass

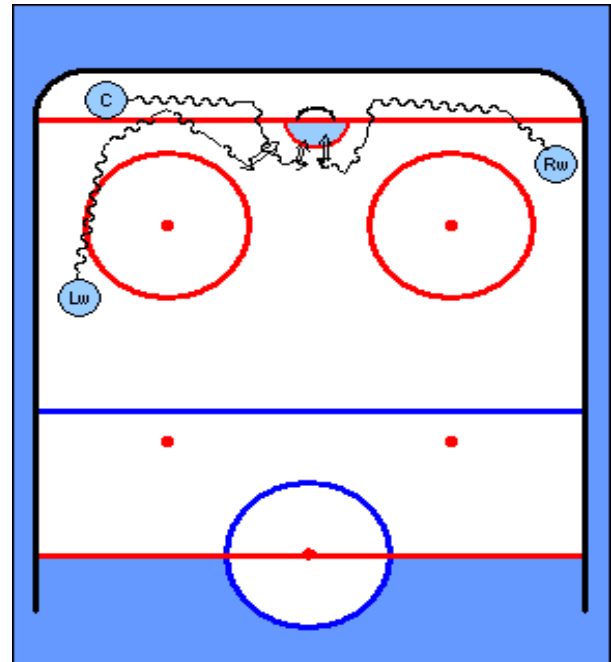
- Passes which come close to the net the goalie has to intercept.
- Movement and positioning according the puck (into the line from the puck to the middle of the goal).
- Close-range situations should be played through half-butterfly or butterfly-slides. The usage of the stick is important that it covers the ice surface.
- In shots from the high slot, movement through the T-push.
- The save comes through reaction to the shot, no anticipation.



5. Player coming directly to the net from behind the net

Picture ?? – Player coming directly to the net from behind the net

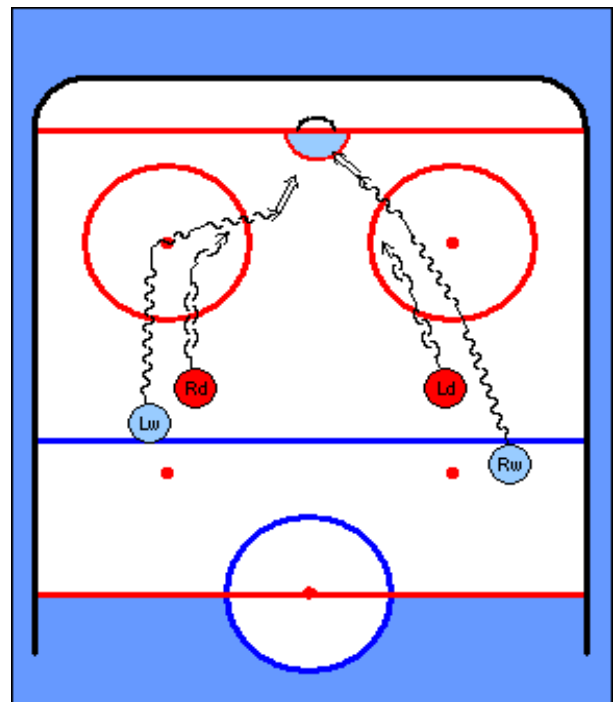
- When the puck is behind the net, the goalie positions himself on the goal line to the side where the puck is.
- All situations that come through the goalie crease, the goalie intercepts with his stick (poke check).
- When the player brings the puck to the back post, the situation should be played similarly like in close-range situations with lateral movement. Glove-side situations should be played especially with the stick covering the whole ice surface.
- The short side should be covered in stand-up.



6. Player striving towards the net from the high circle from a 1vs1-situation

Picture ?? – Player striving towards the net from the high circle from a 1vs1-situation

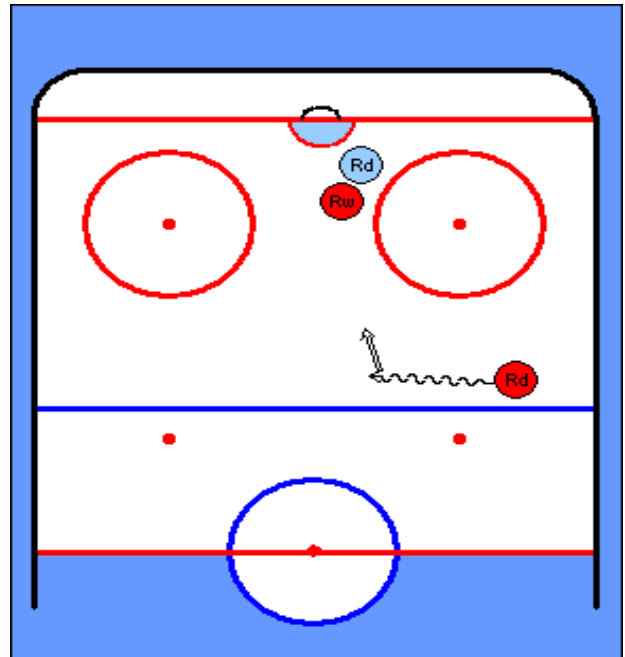
- It is a scoring situation during the whole 1vs1-situation (the shot can come at any time).
- Movement and positioning according the position of the puck.
- The situation should be played boldly so that the goalie is positioned out on the crease.
- The save should be made according the development of the situation (butterfly, butterfly-slide, half-butterfly-slide, half-butterfly with the stick covering the whole ice surface, poke-checks).
- Usage of the stick – active playing
- The goalie has to read the side the player is playing (left- or right-handed).



7. A shot with traffic in front of the net

Picture ?? – A shot with traffic in front of the net

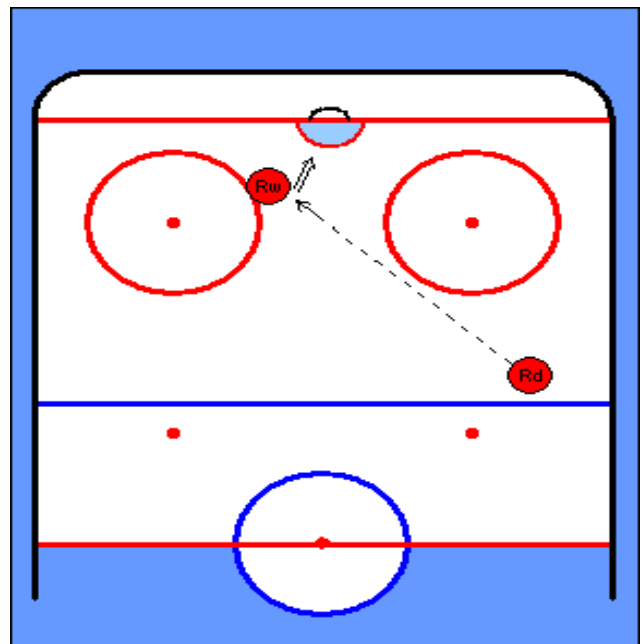
- Positioning according to the position of the puck
- The goalie has to see the puck
- The goalie has to position himself as close as possible to the player who is in front of him.
- If the goalie does not see the puck, the goalie has to try to get the biggest possible cover of the goal through positioning.
- The goalie tries to play as long as possible through stand-ups, if he has to cover only the goal, then the butterfly (with hands in the top corners of the goal).
- Movement to the middle line of the puck (in accordance to the net).



8. Deflections

Picture ?? – Deflections

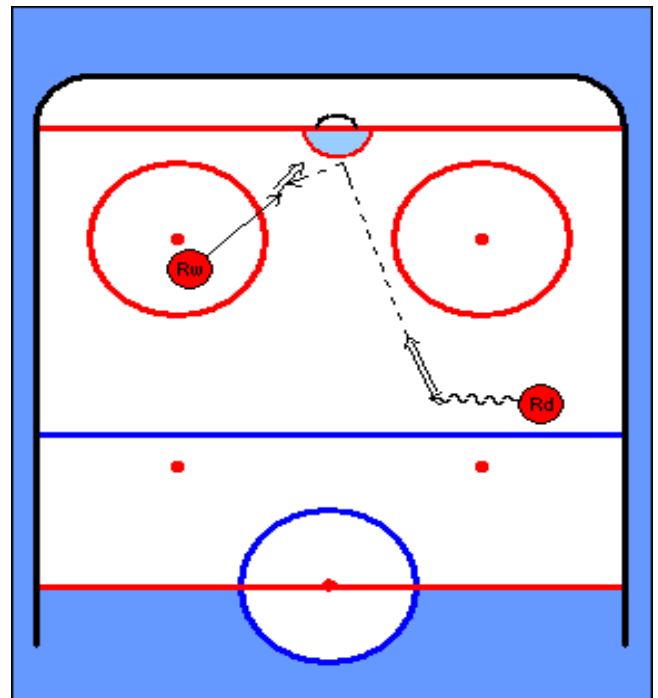
- Movement and positioning according to the position of the puck.
- A quick movement towards the deflector. The goalie has to get as close as possible to the deflector (movement through stand-up or on ice).
- Cover as much as possible!
 - hands in front
 - armpits closed
- Timing!
- Movement to the middle line of the puck (in accordance to the net).
 - to the middle diagonally to the front
 - to the sides diagonally to the back



9. Rebounds

Picture ?? – Rebounds

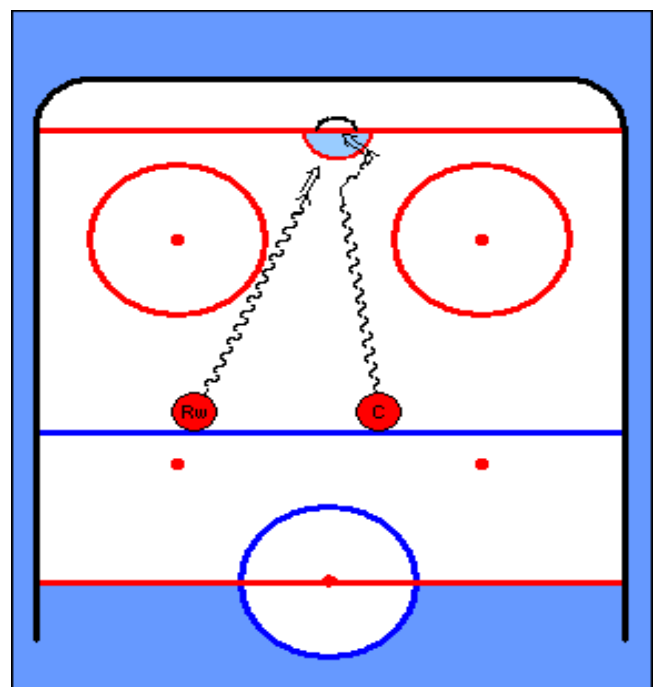
- After the first save
 - When the puck goes far away from the net > right away standing up and movement towards the puck > readiness to save the second puck
 - When the puck stays close to the net > movement on ice towards the puck, hands actively towards the puck and armpits closed, blade of the stick close to the puck
- The goalie gets all close range pucks by himself, or plays them away from the net.
- Readiness to save has to remain the whole time.
- Usage of the stick is very important



10. Breakaway

Picture ?? – Breakaway

- The goalie has to position himself adequately out of the net.
- The goalie has to maintain a sufficiently short distance to the attacker.
- The goalie has to gain the speed of the attacker in his movement.
- Usage of the stick; poke-checks.
- The goalie has to change his stance during the breakaway into a more covering stance.
- The goalie has to have patience to wait the decision of the attacker.



5.) Coaching the goalie in practices and in games

When you coach goalies there are a few critical things that should be remembered when you start the training process.

Goalies are often personalities that want to be in some way always in the spotlight. They have characteristics that clearly show that they enjoy the pressure and heat of the position of the goalie. Very often goalies can be seen as perfectionists. This knowledge is crucial, when they are going through their own game. Often they are very critical towards their own mistakes.

Even though they are perfectionists, and they want to be in the spotlight, many goalies are still sensitive characters. They can get very depressive easily if hard criticism comes towards them. Especially unnecessary criticism from the head coach can get the goalie into a mental lock-feeling, that easily leads to poor performance due to fear of failure. In these cases it is really important for the goalie coach to be there for the goalie, and relieve his pressure through positive feedback. Often it is just enough that somebody talks to the goalie, and listens to his feelings.

5.1 In practices

In practices it is still very normal that goalies don't get any feedback or instructions from the head coach. This can easily lead to a situation where the goalie feels that he is not a normal member of the team. It is the job of the goalie coach to make sure that the goalie gets feedback and his effort is recognized also by the head coach.

The goalie coach has to be able to participate in planning the practice on side of the head coach. In each practice there should be a section which is designed for the goalies. This means, that 5 to 10 % of the practice should be designed for the goalies. This doesn't mean that it has to be a separate drill, remember that every scoring drill is also a goalie drill. The goalie coach should give pointers to the head coach about the needs of the goalies, e.g. if the goalie should practice on his lateral movement there should be a lot of one-timer shots from lateral passes. If the goalie needs to work on his rebound-playing the drill could consist of two shots in a row from different sides of the offensive area.

During team practice still the majority of the drills are planned for the players. Into these drills the goalie coach should always give the goalie a specific task or goal which he tries to execute or reach. Every drill and every practice should have a specific theme. This is also the thing about which the goalie coach should give feedback. This can be for example stand-up

saves or every shot is saved through the butterfly. Only through this the goalie can focus clearly on some specific skill, and can also evaluate his own performance.

When there is a break in practice or there is a drill where there are not a lot of shots coming onto the net, it would be very important to develop a routine of movement-patterns for the goalie, which he could execute always when there would be time during the practice. This should be a simple routine which takes only a few minutes. Through this the goalie gets the needed amount of repetitions also on his skates.

5.2 In games

The goalie coach should develop a certain routine how he handles his goalies also during games. This means of course that usually there are two goalies involved in games, the starter and the back-up. Of course the more important one is the one who plays, but you should never forget totally the one who is the back-up.

5.2.1 Rotation of goalies

First of all the goalie coach should have a conversation with his head coach about his philosophy of the goalies rotation. Does the team have a clear number one or does it have two or even three competing goalies. The head coach and the goalie coach should decide a rotation philosophy, and then discuss it with the goalies. The goalies have to be aware of the philosophy so that they can really focus on their job in the team. The best situation is of course if there are at least two competing goalies so that they have to show their best in every practice and in every game.

Considerations to decide:

- Alternate game by game.
- Go with the “hot hand” (based on coach’s assessment).
- Play them as long as they win.
- Play according to success against a particular team.
- Play based upon practice effort and results.

Discuss with your goalies how they want to know who is going to be starter in the next game. Some goalies want to know it already a few days before the game so that they can start to concentrate already for the game. Some don’t want to know it before the game-day, because they know themselves that they will get too nervous. Sometimes it is not possible to

let them know in advance due to a hard decision who plays, but remember it is the goalie that plays, let him influence these routines.

5.2.2 Pulling your goalie

Sometimes during a game there is a situation that the head coach decides to pull the starting goalie and changes him to the back-up even though there would be no case of injury. This may produce a positive impact on the team in that particular game, but it may also have a very negative effect on the goalie that was pulled. This depends a lot on the personalities of the ones who are affected in the situation (goalie who is pulled, goalie who goes into the net) and on the circumstances that have happened in the game (bad luck bounces or bad play by the team).

In order to make this decision correctly the coach who makes this decision has to know his players and his goalies. It would be also very important to discuss this situation between the head coach and the goalie coach, that who makes this decision. It would be important to let the team also know why the goalie was pulled, was it because he played poorly or because the coach tried to wake up the team.

There are few good key-questions the coach and goalie coach should go through in advance that they can make the right decision in the stressful game-situation:

- What effect will it have on the potential winning or losing of that game?
- Will it improve or hurt that goalkeeper's performance in the next game?
- What effect will this have on the self-confidence of the goalkeeper?
- Will you explain your rationale and how the goalkeepers can improve their faults?
- Are you certain the alternate is ready and will perform better?
- Are you giving the backup goalkeeper some needed game time because the game has been decided?
- If you often replace your goalkeepers, do you think that fear of being replaced enhances or hurts their performance?

Pulling your goalie is always a decision that should be made after careful consideration. A good talk between the coaches and the goalies before the season over this topic would be a good way to make things clear for the goalies also. This leads then to a better harmony between the coaching staff and their most important players in the team.

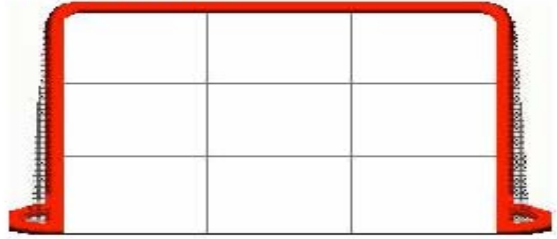
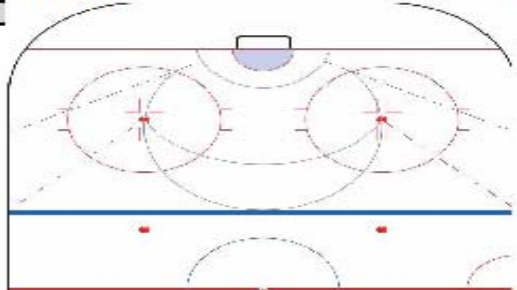
Appendix 1

Goalie follow up form

TEAM	NATION
SHOT MAP/GOALIE FOLLOW-UP	
Goalie:	Saving pct %:
Game:	Result:
Date:	Shots total:
GOALS:	
Glove down:	
Blocker down:	
Glove mid height:	
Blocker mid height:	
Glove high:	
Blocker high:	
Middle down:	
Middle mid height:	
Middle high:	
Areas:	
Area 1	
Area 2	
Area 3	
Some else:	

SCORING SITUATIONS / SHOTS	SCORING SITUATIONS / SHOTS
Regular shot:	Break outs:
Shot from a pass coming behind of the net:	Dumps:
Shot to a lateral pass:	Lateral movement:
Shot from a sharp angle:	Up and down movement:
Rebound:	2-1:
Screan:	3-2:
Deflection:	Powerplay:
Breakaway:	Boxplay:
Coming from the post:	Boxplay 2:
Fighting to the net from the corner:	Area 1
Others:	Area 2
	Area 3

Circled number= Goal

References

Goalie coach education material of FIHA (Finnish Ice Hockey Association)

Goalie coach education material of Hockey Canada

Goalie coach education material of SIHA (Swedish Ice Hockey Association)